

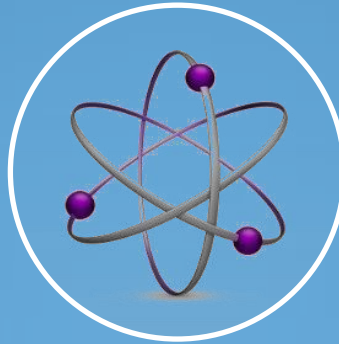
Digital Printing Workshop

Conventions in This Presentation



Recommended

- Recommended for Photography/Digital Printing



Advanced

- For the More Experienced



Holy Grail

- Key Component Leading to Optimal Printing Fidelity

Who am I?



Jeff Lackey

Background

- Software Engineer & Photographer
- CCC Technical Operations Officer

Expertise

- Imaging Software Expert
- Workshops & Online Training

Experience

- Wide Format Printing
- Co-Principal at J&J Digital LLC



Ask me about professional imaging solutions from Nikon, Epson, Adobe, Lexjet, Google, and many others.

What Topics Will We Cover?

Motivation

- Why Talk About Printing?
- Digital Printing/Fine Art Printing
- Choosing a Printer

Color Basics

- What is Color?
- Color Profiles
- Color Management in Photoshop and Lightroom
- Soft Proofing

Preparation

- Tone & Color
- Sharpening & Noise Reduction
- Sizing & Output Resolution

Printing

- Print Driver
- Printing Dialogs
- Printing Workflow
- Wrap-Up

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Why Talk About Printing?



What is Digital Printing?

Definition:

- Digital Printing Refers to Methods of Printing Digital-Based Imagery on a Variety of Media

Process:

- Digitally controlled ink deposition
- Quicker Turnaround
- Lower Cost

Types:

- Piezoelectric
- Thermal
- Pigments, Dyes & Solvents
- Sublimation

Presentation

- Matting & Mounting
- Coatings
- Framing

What is a Fine Art Print?

Quality

- Guarantee Accurate Color
- Continuous Subtle Tonality
- Good Contrast

Media

- Quality Printing Substrates
- Right Paper for the Right Image
- Archival & Long Lasting

Preparation

- Preparing the Image
- Making the Print
- Print Finishing Options

Print Presentation

- Matting & Mounting
- Coatings
- Framing

What Types of Printers Are There?

Consumer

- Commodity
- Expensive Ink
- Often Multifunction
- HP, Canon, Epson, Others



HP Photosmart 7520
All-In-One \$119

Prosumer

- Dedicated Image Printers
- 13", 17" Widths
- Epson, Canon



Epson Stylus Photo R2880: \$599
Epson Stylus Pro 3880: \$1295



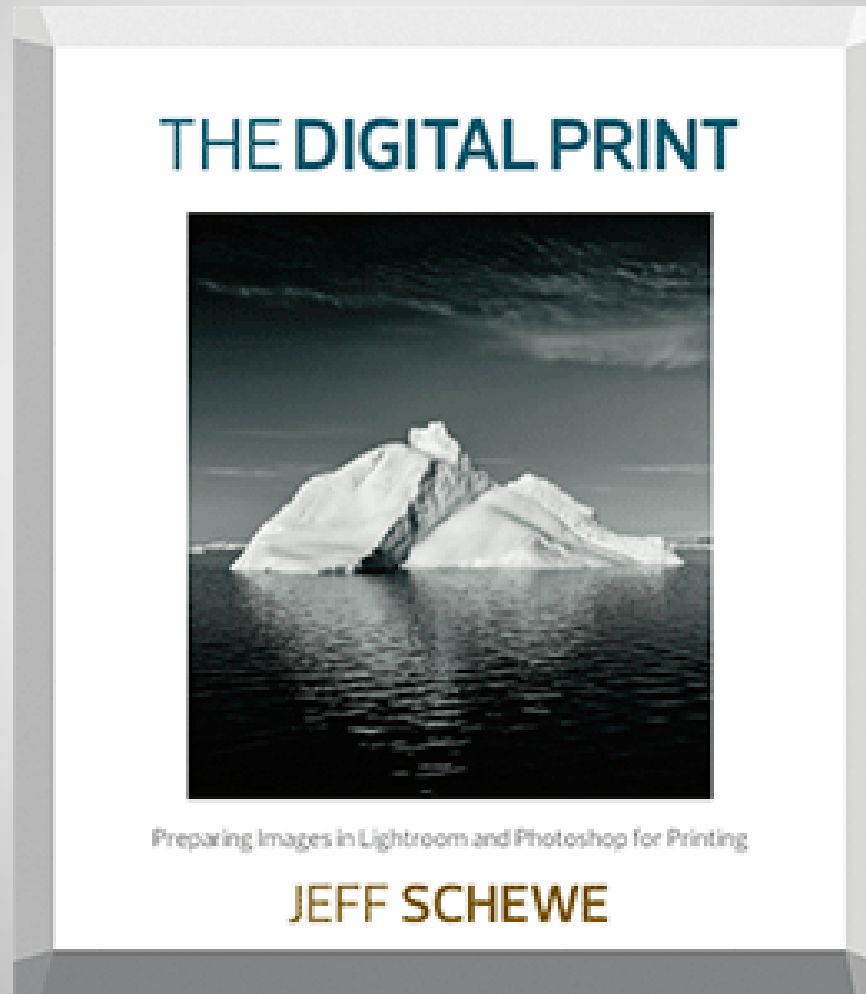
Professional

- Wide Format (24", 44")
- 10+ colors
- Advanced Media Capability
- Epson, Canon



Epson Stylus Pro 7900: \$2949
Epson Stylus Pro 9900: \$3995

What have the experts got to say?



What's Next?



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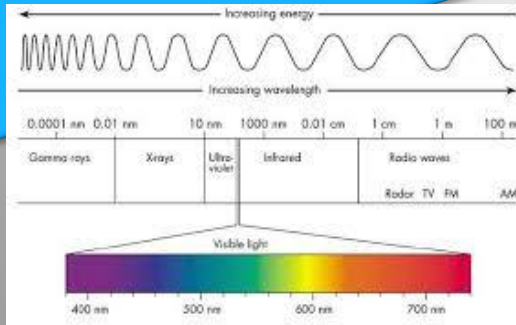
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Color Theory: What is Color?

Color

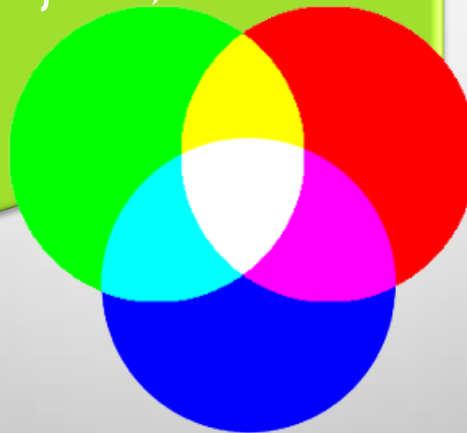
- Perception by Human Visual System
- Objects absorb certain wavelengths and reflect back others
- Light+Object+Observer



The Visible Spectrum

Additive Colors

- Light sources of form colors by illumination
- Red, Green, Blue
- Cameras, Monitors, Projectors, Television



Additive Colors

Subtractive Colors

- Uses dyes, inks, pigments to absorb certain light and reflect others
- Cyan, Magenta, Yellow
- Printing & Painting



Subtractive Colors

What is Color Management?

Definition:

- Color Management is the Controlled or Managed Conversion Between Color Representations of Different Devices

Color Profiles

- Set of data which characterizes an input or output device according to standards (ICC)

Profile Types

- Input Profiles - Cameras, Scanners
- Display & Working Space Profiles
- Output Profiles - Printers

Printer Profiles

- Specific to Printer Ink Formulations & Media Type

Should I Calibrate My Monitor?

Yes!



Why?

- Uncalibrated Colors May Have Inaccurate Brightness/Saturation
- Saves Time and \$\$\$
- Critical for Accurate and Predictable Prints



How?

- Calibration is the Process of Getting Your Monitor Into a Well-Defined State
- Calibration: Changing Physical Parameters
- Profiling: Characterizing

Devices:

Two Camps: Colorimeter or Spectrophotometer

- X-Rite Eye One Display
- Color Munki Photo
- Colorvision Spyder



What Working Color Space Should I Use?

sRGB

- Default Color Space for Many Devices and Applications
- Smallest Color Space
- Intended for Monitors, Browsers, Projectors

Adobe RGB

- AKA Adobe RGB (1998)
- Available on Most Cameras
- Adds More Saturated, Brighter Colors



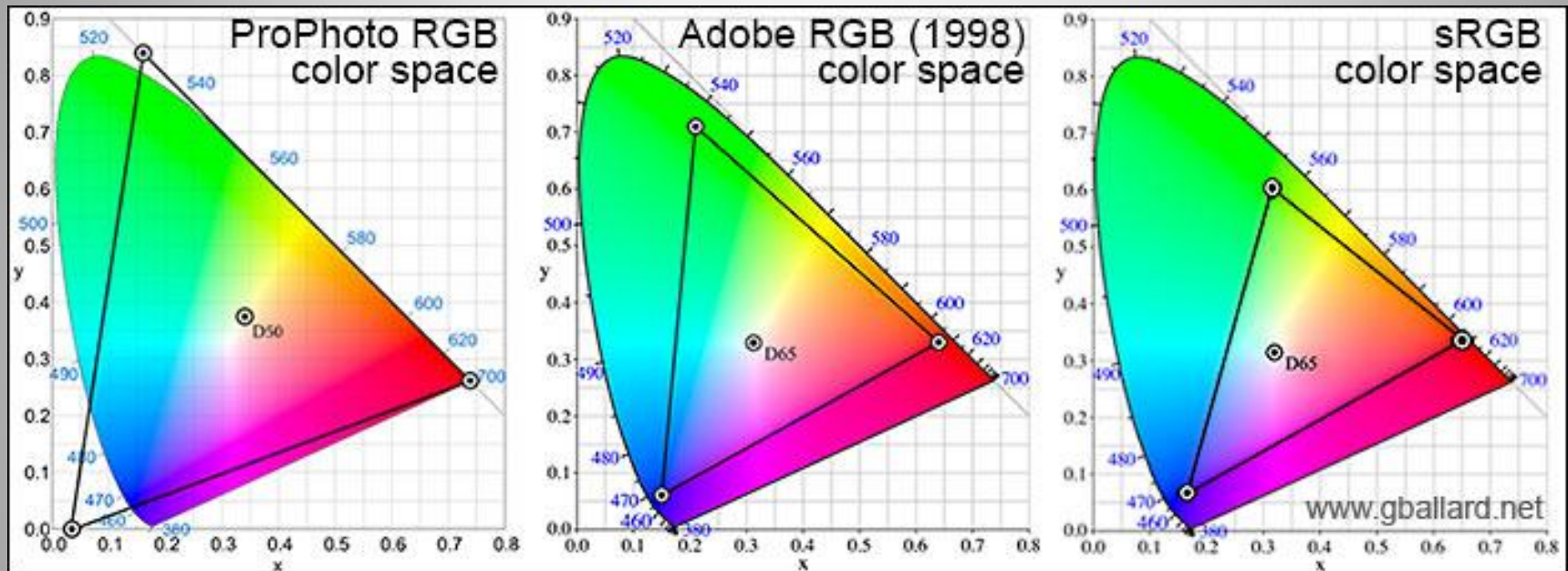
Pro Photo RGB

- Larger than Adobe RGB with Even More Colors Possible
- New Professional Inks are Printing Colors in Pro Photo Range



Use either Adobe RGB or ProPhoto RGB for PS/LR when preparing images to print. You can also set your camera to Adobe RGB for JPEG capture.

How Do These Color Spaces Compare?



How Do I Set My Working Color Space?

Photoshop

- Color Settings Dialog (bottom of Edit Menu)
- Set Working RGB to Adobe or ProPhoto
- Policies - Set to Preserve Embedded Profile /Ask

Lightroom

- Lightroom Performs “Under the Hood” Color Management
- You Only Need to Specify Color Space for External Applications and the Export Module

What is a Printer Profile?

Definition:

A printer profile specifies the available colors for a specific printer, ink and media combination

Types:

Pre-Built: typically available for free download from media providers

Custom: “self-profiling” process by measuring known outputs

Uses:

Managed Printing by Applications

Soft Proofing to Visualize

How-To:

Easy Right-Click install in Windows

Specify When Printing with Additional Instructions



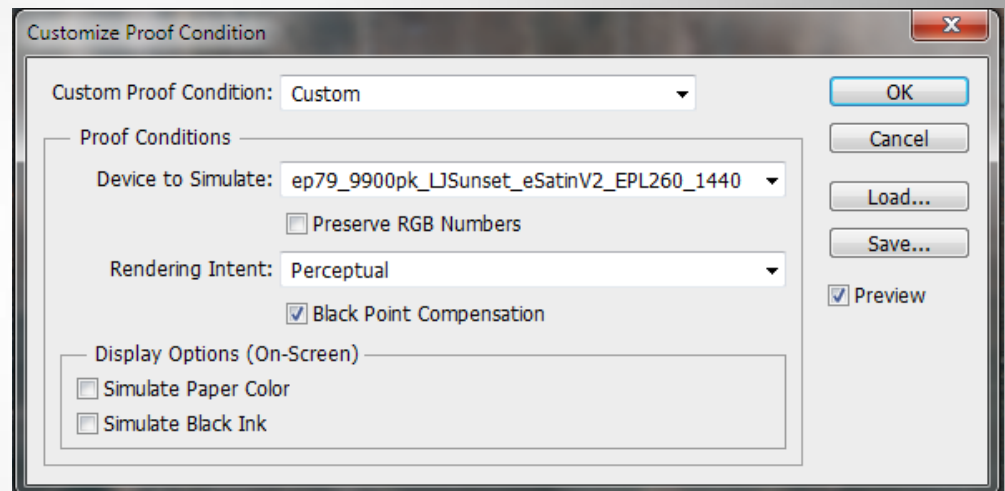
How Do I Do Soft Proofing?

Setup

- View > Proof Setup > Custom
- Select Profile (Printer/Media)
- Select Rendering Intent
- Preserve RGB OFF
- Black Point ON



**In Most Cases Select Perceptual
or Relative Colormetric Rendering**



Soft Proofing uses color management to predict how your image will reproduce based on your printer and profile selection. Click the preview button to preview how your image will render.

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Tone & Color in Lightroom & Camera RAW

Basic Adjustments

- White Balance
- Exposure, Contrast
- Tone: Highlights, Shadows, Whites, Blacks
- Presence: Clarity, Vibrance, Saturation



Tone Curve Panel

- Selectively Adjust Brightness in Different Areas
- Can Influence Entire Image or Individual Color Channels



Local Adjustments

- Apply to Selective Parts of the Image
- Adjustment Brush
- Graduated Filter



Optimizing Tone & Color in Photoshop

When Use PS?

- Starting with TIFF, e.g. Scan
- Advanced Masking Needed

Adjustment Layers

- Curves, Levels
- Hue/Saturation
- May other options



Selective Adjustments

- The Selections, Masks and Channels, Tools and Adjustments Available in Photoshop Allow for an Infinite Range of Image Adjustments



When Should I Sharpen My Images?

Presharpening Input Sharpening

- In Camera
- Lightroom Import/NIK
- Also Good Time for Noise Removal

Creative Sharpening

- PS as main Tool

Output Sharpening

- Always Perform After Sizing to Final Print Size and Resolution
- Perform “Screen” for JPG Exports

I use NIK Sharpener Pro 3.0 for Input Sharpening (with LR sharpening disabled) and Nik for final output sharpening for ultimate fine control over print sharpening.



Image and Output Resolution

Resolution

- Digital Images Have No Absolute Size or Resolution
- Effective Resolution of a Print Depends on Image Size
- DPI vs PPI

How Much Resolution?

- Depends on the Device
- Display/Web — 72 PPI
- Print — 300 PPI (Canon) or 360 (Epson)

How To

- Size Without Resampling
- Sizing With Resampling
- Use Bicubic Smoother for Enlargements, Sharper for Reduction

Pop Quiz: What is the resolution of a 3600x2400 pixel image?

**Answer: It depends. 6.7'x10" = 360 PPI, 8"x12" -> 300 PPI.
13.3"x20"=180PPI, 16"x20"=150PPI.**

How Large Can I Print From My Camera?

Answer: It depends on the effective resolution (PPI).

Image Dimensions		Effective Resolution/Megapixels			
Height	Width	150 PPI	180 PPI	300 PPI	360 PPI
4	6	0.5	0.8	2.2	3.1
8	10	1.8	2.6	7.2	10.4
16	20	7.2	10.4	28.8	41.5
16	24	8.6	12.4	34.6	49.8

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Printing

- Print Driver
- Soft Proofing
- PS Print Dialogs
- Printing from LR
- A Workflow

What is the Print Driver?

Definition

- Converts Data for Printing
- Applications Can Print Without Awareness of Printer Details

Installation

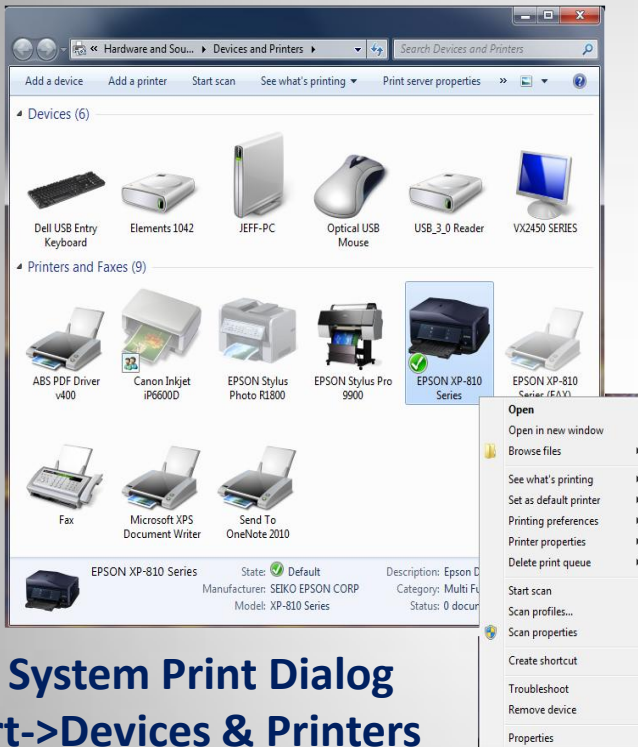
- Download & Install the Most Recent Version
- Run Installer for Drivers and Utilities
- Ports: USB or Network



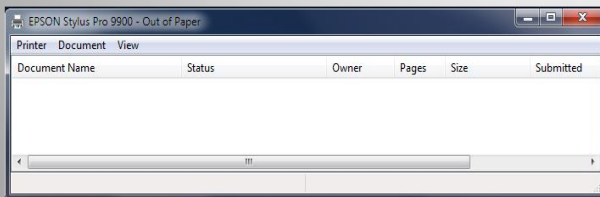
Using the Driver

- System Dialog
- Print Queues
- Print Properties
- Print Preferences

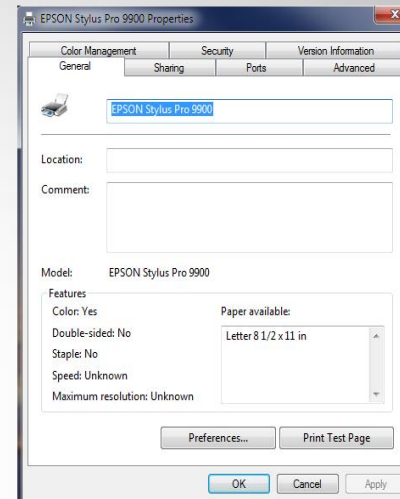
Print Driver Dialogs



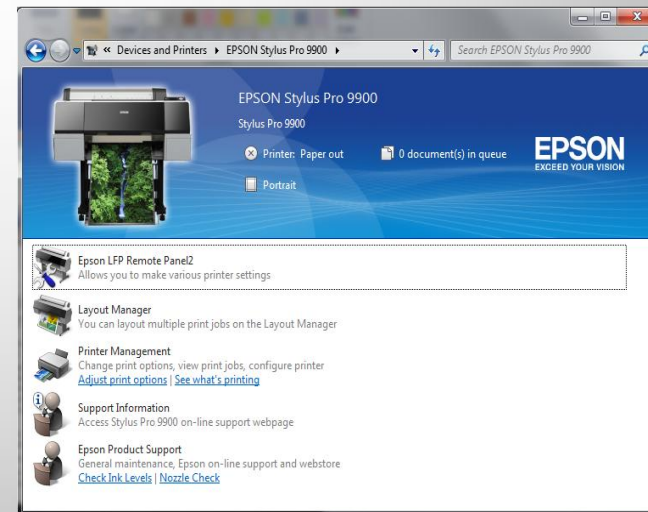
The System Print Dialog
Start->Devices & Printers



The Print Queue Dialog



The System
Level Print
Properties
Dialog



Printer
Specific
Dialog

How Do I Print From Photoshop?

Printer Setup

- Select Printer
- Set Media Type, Quality, Media Source (sheet or roll) and Paper Size
- **TURN OFF COLOR MGMT IN THE DRIVER**



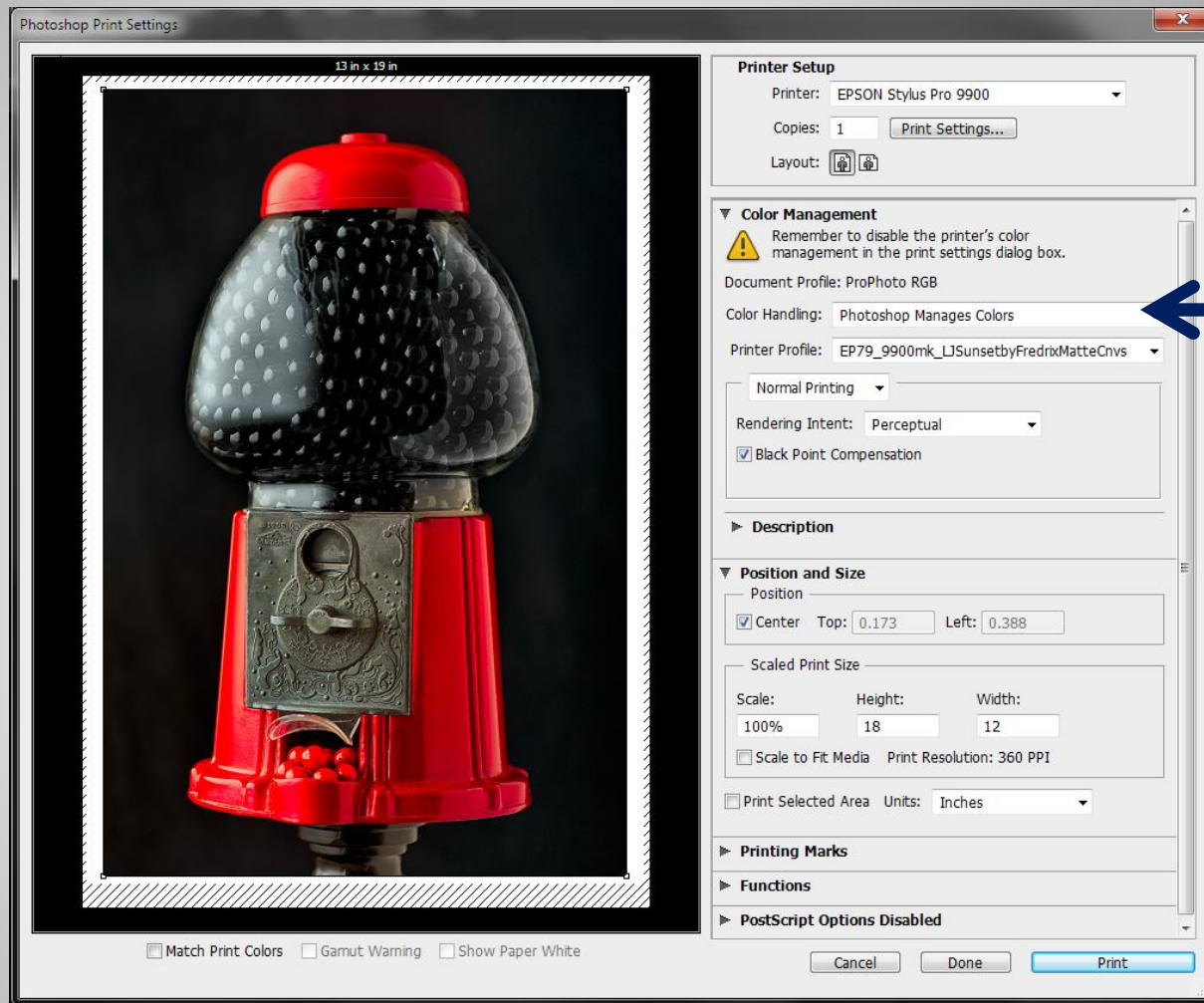
Color Management

- PS MANAGES COLOR
- Select Correct Profile
- Black Point Compensation ON



Position and Size

- Recommend 100% (pre-size in Image Size)
- Note: Some printers do edge printing for only certain paper widths.





Current Settings

Main

Media Type: Ultra Premium Photo Paper Luster

Print Quality Level: LEVEL 5 (Max Quality)

Print Quality: SuperPhoto - 2880x1440dpi

High Speed: On

Color: Off

Source: Sheet

Centered: Off

Page Layout


Orientation: Portrait


Print to 100%: Off

Mirror Image: Off

Copies: 1

Size: User Defined



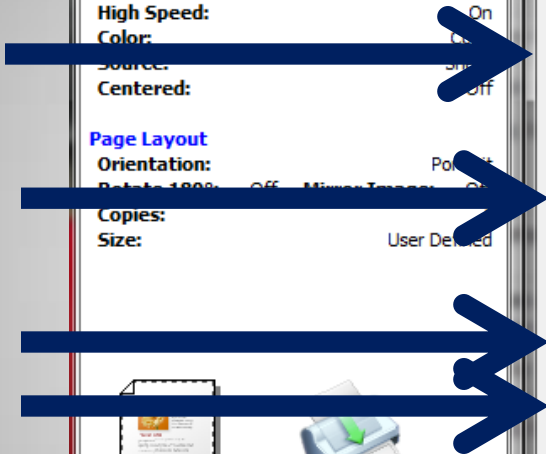


Color Correction

Color Adjustment: Off (No Color Adjustment)

☒ Always show Current Settings.

Close



EPSON Stylus Pro 9900 Properties

Main Page Layout Utility

Select Setting : Current Settings Save/Del...

Media Settings

Media Type : Ultra Premium Photo Paper Luster Custom Settings...

Color : Color Photo Black Ink

Print Quality : Max Quality Paper Config...

Mode : ☐ Automatic ☒ Custom

Off (No Color Adjustment)

Paper Settings

Source : Sheet Printable Area...

Size : User Defined User Defined...

☐ Borderless

☐ Print Preview

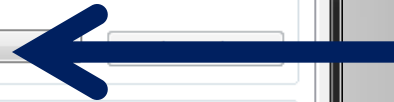
☐ Layout Manager

Ink Levels

C	O	Y	LC	MK	PK	VM	LK	G	LLK	VLM
---	---	---	----	----	----	----	----	---	-----	-----

Reset Defaults(Y) Manual Version 6.72

OK Cancel Help



Checklist: General Preparation

Install Printer and Driver

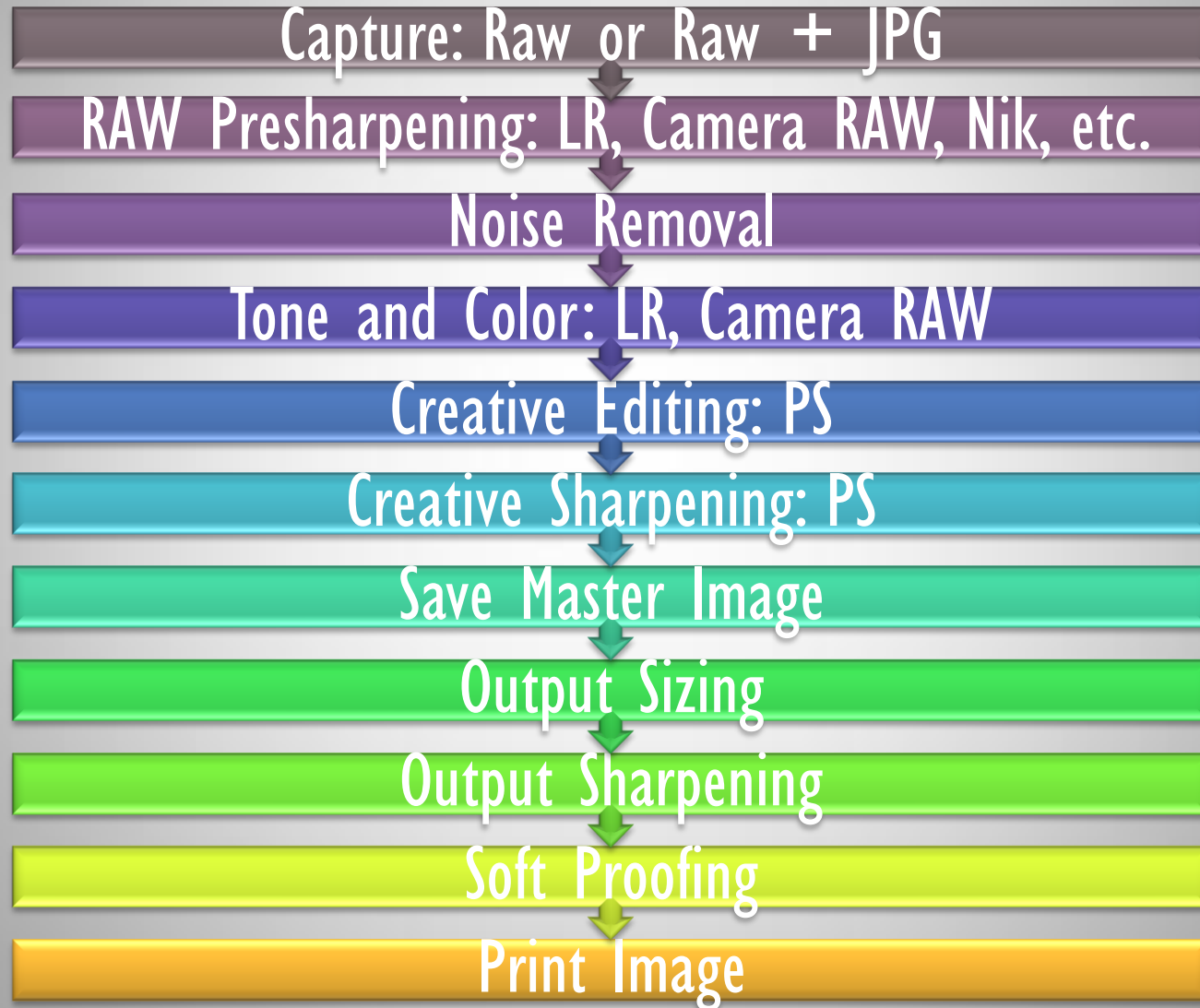
A dark gray arrow pointing downwards from the first step to the second step.

Install Printer Profile(s)

A teal arrow pointing downwards from the second step to the third step.

Calibrate and Use Working Profiles

Workflow: From Capture to Print



Checklist: How Do I Not Screw Up?

Color Management

- Make Sure Only the Application is Managing Color — Not Printer
- Export to sRGB for sharing
- Calibrate display

Profiles

- Use the Correct Profile and Make Sure Printer is Set Correctly for Matte or Photo Black
- Soft Proof using Printer Profile

Printing Options

- Black Point Compensation ON
- Size your image appropriate for your printer

Quality

- Use Only Manufacturer's Inks and Quality Media
- Calibrate Frequently

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Where Can I Learn More?

2/8/2014 Fine-Art Digital Photographic Printing Workshop Hands-On with Stephen Johnson

STEPHEN JOHNSON ♦ PHOTOGRAPHER Workshop

Fine-Art Digital Printing Workshop Hands-On

Register by phone 650 355-7507
[Overnight](#)
[Accommodations](#)

THE FINE ART PRINTING WORKSHOP WITH STEPHEN JOHNSON

Four Days of Hands-On Printing Instruction

Students come in from all across the country for this class....

*Great Teaching
 Real World Experience
 Individualized Instruction*

[Workshop](#)
[Testimonials](#)
[Stephen Johnson Bio](#)



[Workshop Brochure](#)

Stephen Johnson, photographic educator with exceptional talent and dedication, has talents as a teacher no less than his as a master printmaker.

Anyone wishing to become a better photographer could benefit from attending one of Steve's Fine Art Printing Workshops.

-Michael Reich
[The Lull](#)
[Lull](#)



[With our Digital Mac Photo Lab](#)
 each station has its own:

- Mac Intel Duo Core computer
- 21 inch Eizo LCD display
- 10 13x19 Epson printers
- 10 Spectrophotometers for Printer Profiling
- Monitor Calibrator for each system
- Network Connection to large-format printers
- 5000K-6500K Print Viewing lights at each workstation

Topics Include

- Digital Printing Technologies
- Monitor Calibration

http://www.sjphoto.com/print_wspHO_frameset.html

1/2

2/8/2014 The Fine Art of Digital Printing Workshops, Seminars, DVDs – Caponigro, Holbert, Nash Editions, Brooks Institute of PhotographyThe Fine Art of Digital ...

The Fine Art of Digital Printing

Workshop
 April 22-26, 2013
 Brooks Institute, Santa Barbara, CA

Seminars
 The Fine Art of Digital Printing Seminar is coming to a city near you. This 6 hour program is hosted by local ASMP chapters. The seminars are free to ASMP members.

DVD
 Explore our DVD to preview our content. Watch video previews online.

Made possible in part by **EPSON**
 EXCEED YOUR VISION


Register now!

> Workshop Registration
 > Waiting List


Space fills fast! If a workshop is full, sign up for the wait list for priority status.

For inquiries...
 Email
 Phone 207-354-0578



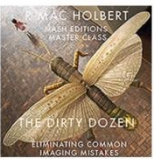
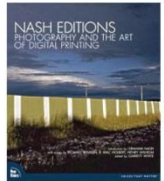
Sign up for *Insights* free to receive advance notice of the next event.



John Paul Caponigro



R. Mac Holbert

Looking for the ultimate digital printmaking workshop?

This premiere workshop is the chance of a lifetime. Learn from two master digital print makers at the same time, fresh off their highly successful tour in the Epson Print Academy, in **The Fine Art of Digital Printing**. The workshops will be held in the state-of-the-art labs of today's premier photographic educational institutions.

This workshop will expose you to a world of possibilities

The workshop translates photographic language and practices from traditional to digital and exposes you to a world of new possibilities. You'll see, use, and evaluate the latest Epson printers, ink, papers, and profiles. An integrated approach to using Adobe products Photoshop, Camera Raw, Bridge, and Lightroom will all be detailed and practiced. By the end of the week you will have mastered a fine art workflow, understand how it differs from others, and learn a variety of techniques and tools that will help improve and refine both your digital files and prints. You'll leave with finished prints and the knowledge you need to get the results you're looking for when you return home. You'll also leave with a vastly expanded set of possibilities for making images.

Topics include...

- Color managed workflow from input to output
- Adobe Bridge, Camera RAW, Lightroom, Photoshop
- RAW conversions
- Sophisticated color adjustment strategies
- Black and white conversions and toning solutions
- Local correction and masking
- Sharpening
- Resampling
- Noise reduction
- RIPs and printer drivers
- Printer maintenance and fine tuning
- Essential printing tests
- Substrate surveys
- Print handling and storage
- Fine art printing techniques

You'll also get reviews of your work from both John Paul and Mac.

[For more](#)

<http://thefineartofdigitalprinting.com/>

Links
johnpaulcaponigro.com
[JP & Mac-Artists on Art](http://jp&mac-artists-on-art)
[Epson Professional Imaging](http://epson-professional-imaging-brooks.edu)
brooks.edu
santabarbara.com

Level
 This workshop is right for you if you want to master digital printmaking and take your digital imaging skills to the next level. This workshop has a strong photographic perspective but is applicable to all types of artists who want to reproduce their work in digital media. Intermediate skill levels with Photoshop are required.

Enrollment

1/2