

Today:

Photo Hardware resources

Photoshop/Gimp intro

More lenses

Winston, Ziwei, see Abby to complete CATME survey

RIGHT NOW

Video editing: Free, open source:

<https://www.openshot.org/>

Get Wet: Post in Wordpress (upload edited jpeg, make featured image) and submit archival final image (NOT jpeg) in Canvas.

Buy Photoshop subscription: CU does not currently have a special price for students to buy. Regular subscription for Photoshop + Lightroom is \$10/month

Other options: previous versions of PS on eBay etc., but can't open newer camera RAW files.

Photoshop Elements: < \$100, probably adequate for this class.

Adobe Lightroom: not as powerful as PS, is designed for professional photography workflow, making same changes to many images at once.

Gimp: Online, open source image processing software. Free. User interface a bit clumsy, slightly tricky to save in non-Gimp file formats.

Most image processing software will be adequate for this course: crop, brightness, intensity, spotting

## **Other Photography Hardware Resources**

Rent macro lenses and other equipment: Pro Photo Rental on Arapaho

<http://prophotorental.com/>

Canon, Nikon, Olympus bodies and lenses. Also used equipment for sale.

Pro Photo Rental, Inc.  
1644 Conestoga St, Suite 5  
Boulder, CO 80301

From <<http://prophotorental.com/contact.asp>>

Victory Camera: Used and Vintage, buy sell trade.

<https://victorycamera.com/>

2875A 28th Street

Boulder, CO 80301

(720) 379-7789

Mike's Camera: Mostly new, some rentals, some used. Repairs. Will match online prices.

2500 Pearl Street

Boulder, CO 80302

Phone: (303) 443-1715

Email: store1@mikescamera.com

<http://mikescamera.com/>

New firmware for your Canon; allows much more control

<http://chdk.wikia.com/wiki/CHDK> open source

Canon Hack Development Kit

Mostly non-DSLRs

<http://www.magiclantern.fm/about.html> also open source

"Magic Lantern is a software enhancement that offers increased functionality to the excellent Canon DSLR cameras. We have created an open framework, licensed under GPL, for developing extensions to the official firmware." built in intervalometer (for time lapse). Motion detection trigger, HDR

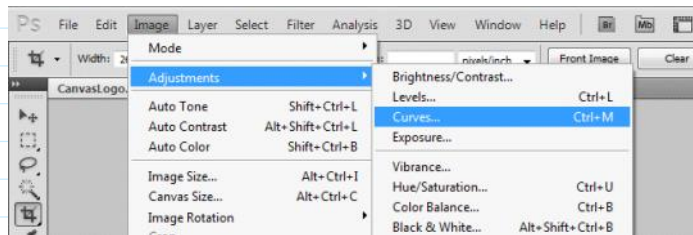
Topics in PS/gimp that we'll cover today:

1. Desktop nav
2. Contrast
3. Crop tool
4. Pad sides of portrait images
5. Clone stamp

- 6. Filters
- 7. File formats

1. Desktop nav: menus, tools, toolbar info, history,

2. Contrast



Increase contrast in PS:

Use Image>Adjustments>Curves or hotkey ctrl-m

Gimp: Colors menu > Curves

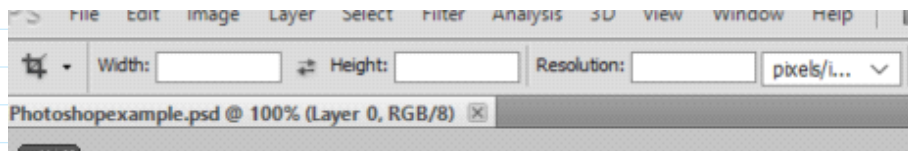
It's all you need. Avoid automatic adjustments; they will rob you of skill.

Look at info, shows RGB values. Also shows equivalent CMYK, used in hardcopy industry.

Curve = 'transfer function'; maps starting pixel values to final.

Increased contrast has 'S' shape.

Avoid saturating highlights and shadows; try to retain information there by having a non-zero slope at bottom and top.



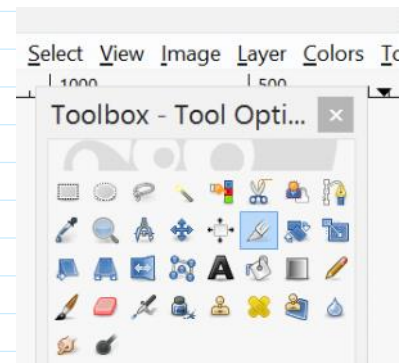
GIMP

3) Crop tool:

Make sure specs in toolbar are clear.

Can rotate crop using cursor outside of crop area

Choose 'Perspective' in toolbar to change a non-rectangular area into a rectangular one. Caution! Stretching part of an image can destroy geometry information. Gimp: Select area with selection tool, then crop from ? menu. For changing crop shape, use Transform Matrix



4. Pad sides of portrait images. Needed for Wordpress FV site.

Use Image>Canvas Size. Set extension color to neutral gray

5. Clone stamp  
RGB = 41 or hex 29

Better than 'healing brush' for corrections, but healing brush really is good for fixing face blemishes.

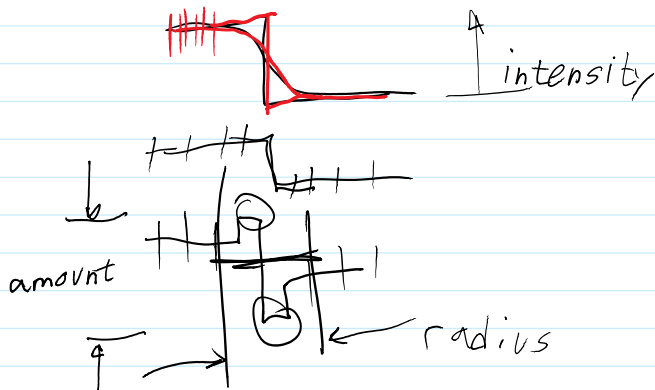
PS: select source with Alt click

Gimp: select source with Ctrl click

## 6. Filters

Can do wild stuff, but algorithms are unknown. When making images for both scientific and artistic purposes, avoid destroying information whenever possible. Try to get desired effects with known transformations instead of mysterious ones.

Sharpen: amplifies difference between adjacent pixels. Old painting technique; edges outlined by black on one side, white on the other. Use Filters>Sharpen>Unsharp Mask.



Good tutorial: <http://psd.fanextra.com/tutorials/photoshop-sharpen/>

## 7. File Formats

PS: Save As

Gimp: Export

OK to send final images to Canvas in these formats

Native PS format: psd

Also TIFF, PNG

Please no native Gimp: .xcf

Do NOT send FINAL images to Canvas as JPG! Not acceptable for archiving.

Information is **lost** when saving in jpeg

[http://cscie12.dce.harvard.edu/lecture\\_notes/2011/20110309/slide42.html](http://cscie12.dce.harvard.edu/lecture_notes/2011/20110309/slide42.html)

Non-Lossy image file formats. These are acceptable for edited images submitted in class.

TIF, PNG, PSD

Most cameras store images as jpeg. Open in PS, then edit and store as PSD, Photoshop's native format or .XCF, in Gimp

DON'T use *Photoshop* RAW. Metadata is lost; images can't be opened.

*Camera* raw formats, like NEF, CR2 etc, are Ok for original images.

For uploading to Wordpress: YES save as jpeg, max width 1300 px for landscape image. For portrait orientation image, make into a landscape format: save as 1100 wide by 900 high, with extra space on sides in a dark neutral gray. Our Wordpress theme, Impreza is 'responsive', resizes image for each device, but makes portrait orientation images too large and low res when selected as featured image for a post.



