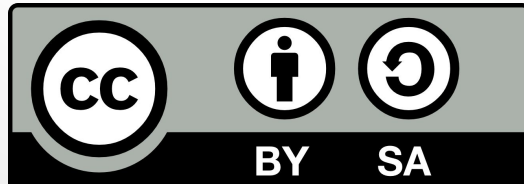


# Digital Photography 101

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@pbeens



# Contents

- The Perfect Photo
- Transferring and Managing Your Photos
- Processing Your Photos
- Backing Up Your Photos
- Editing Pictures on Your Smartphone
- Photowalk
- Final Thoughts

# Tweeting Request

- hashtag #BIT14
- @pbeens

# **The Perfect Photo**

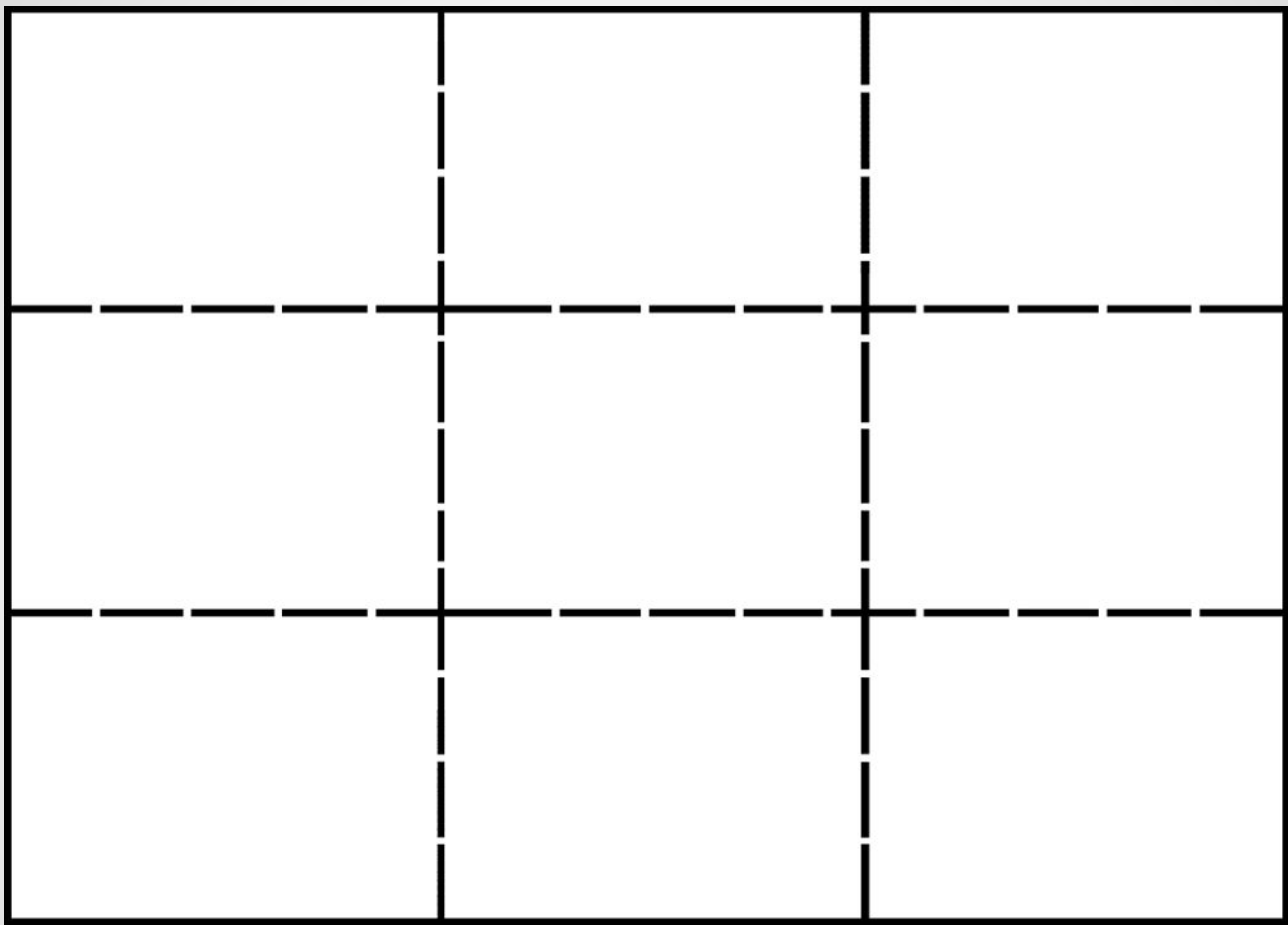
# The Perfect Photo? Ansel Adams' Thoughts on This...

- “There are no rules for good photographs, there are only good photographs.”
- “The negative is the equivalent of the composer's score, and the print the performance.”

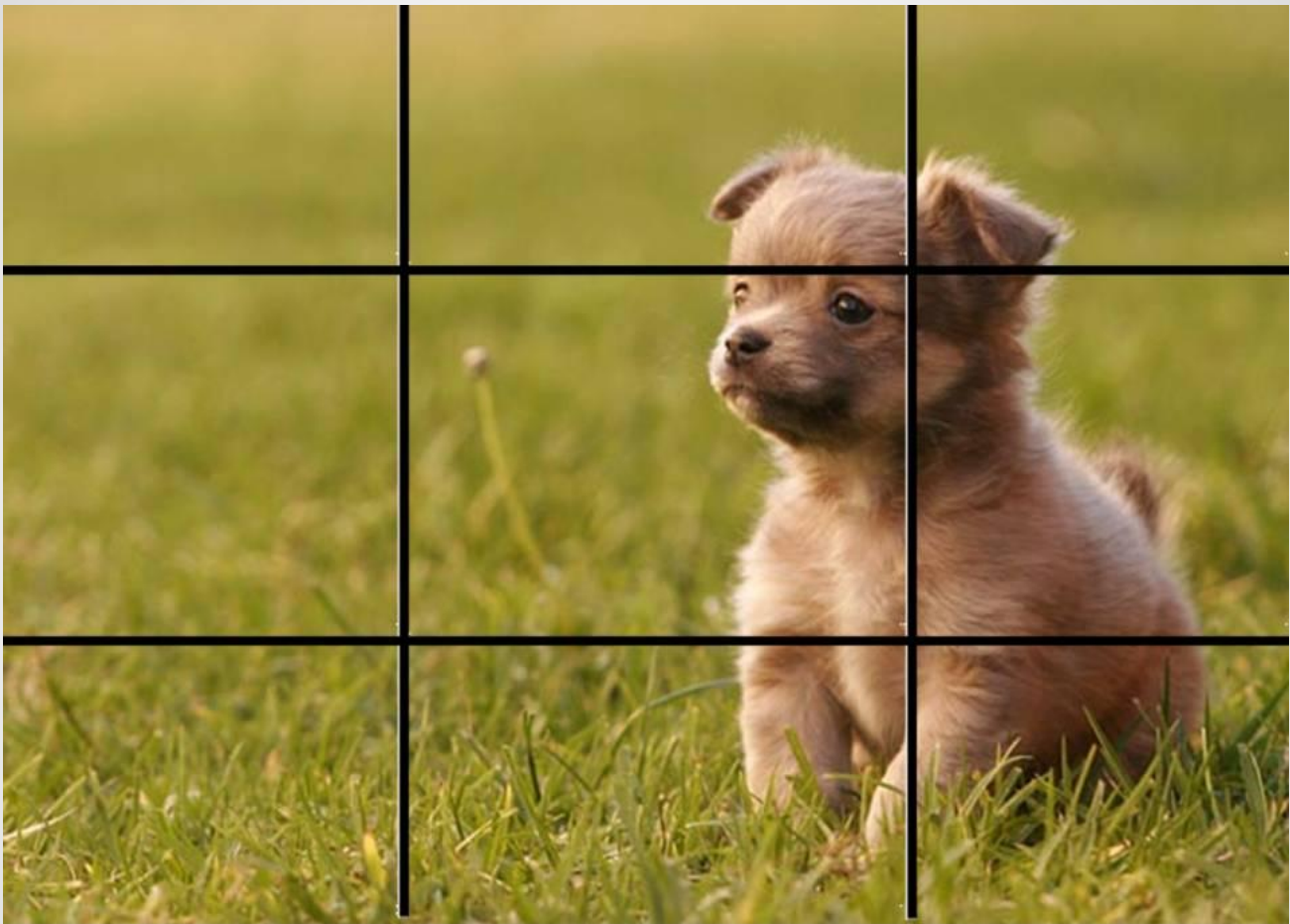
(Credit: <http://goo.gl/xloCKR>)

# The Perfect Photo - Composition

- Composition
  - Rule of Thirds
  - Golden Ratio
- Technique
  - Aperture vs Shutter priority
  - HDR
  - Depth of Field (amount in focus)
  - Sharpness (or lack thereof)
  - Motion
  - (the sky's the limit!)

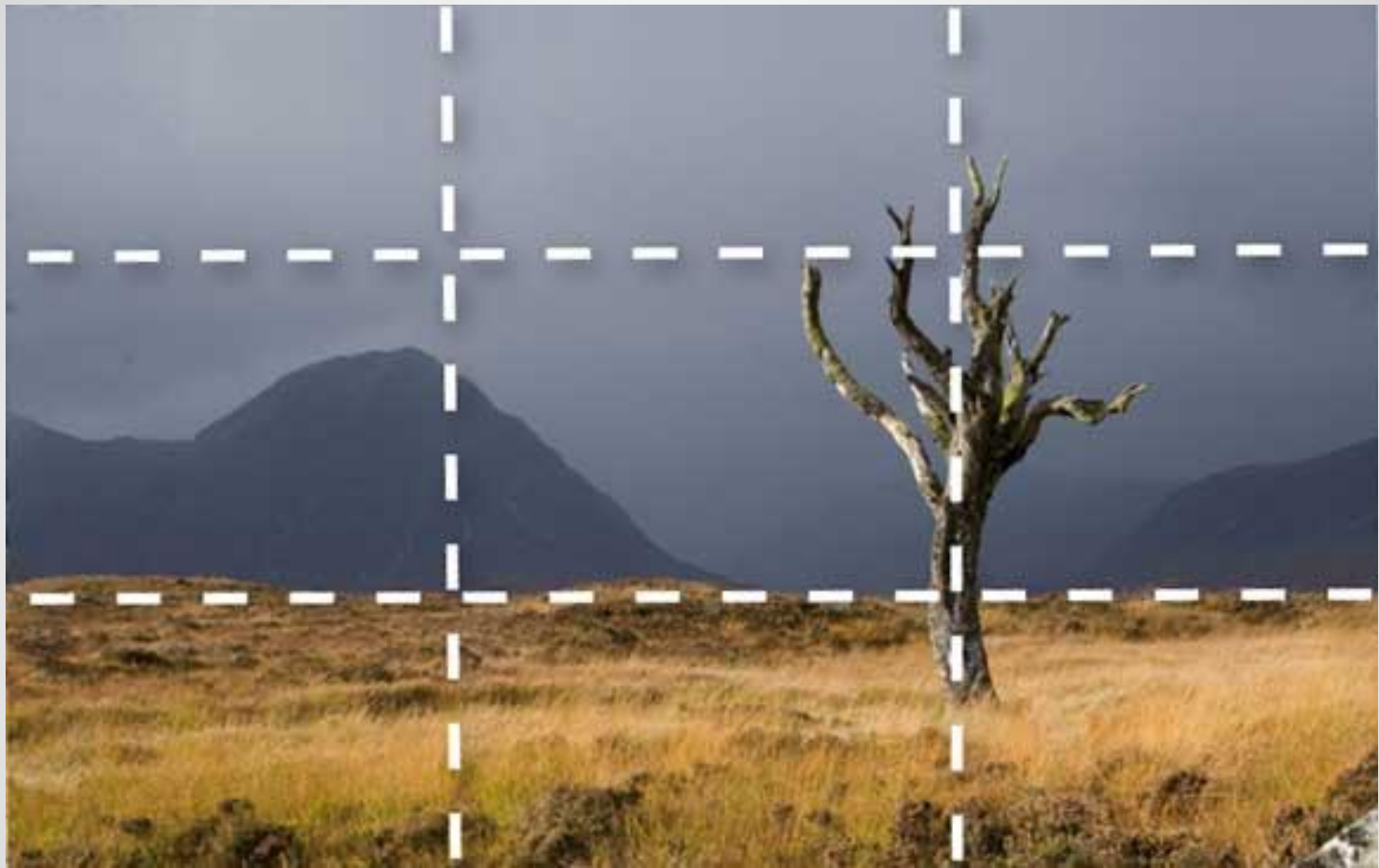


Rule of Thirds (credit: <http://goo.gl/0OFL7p>)

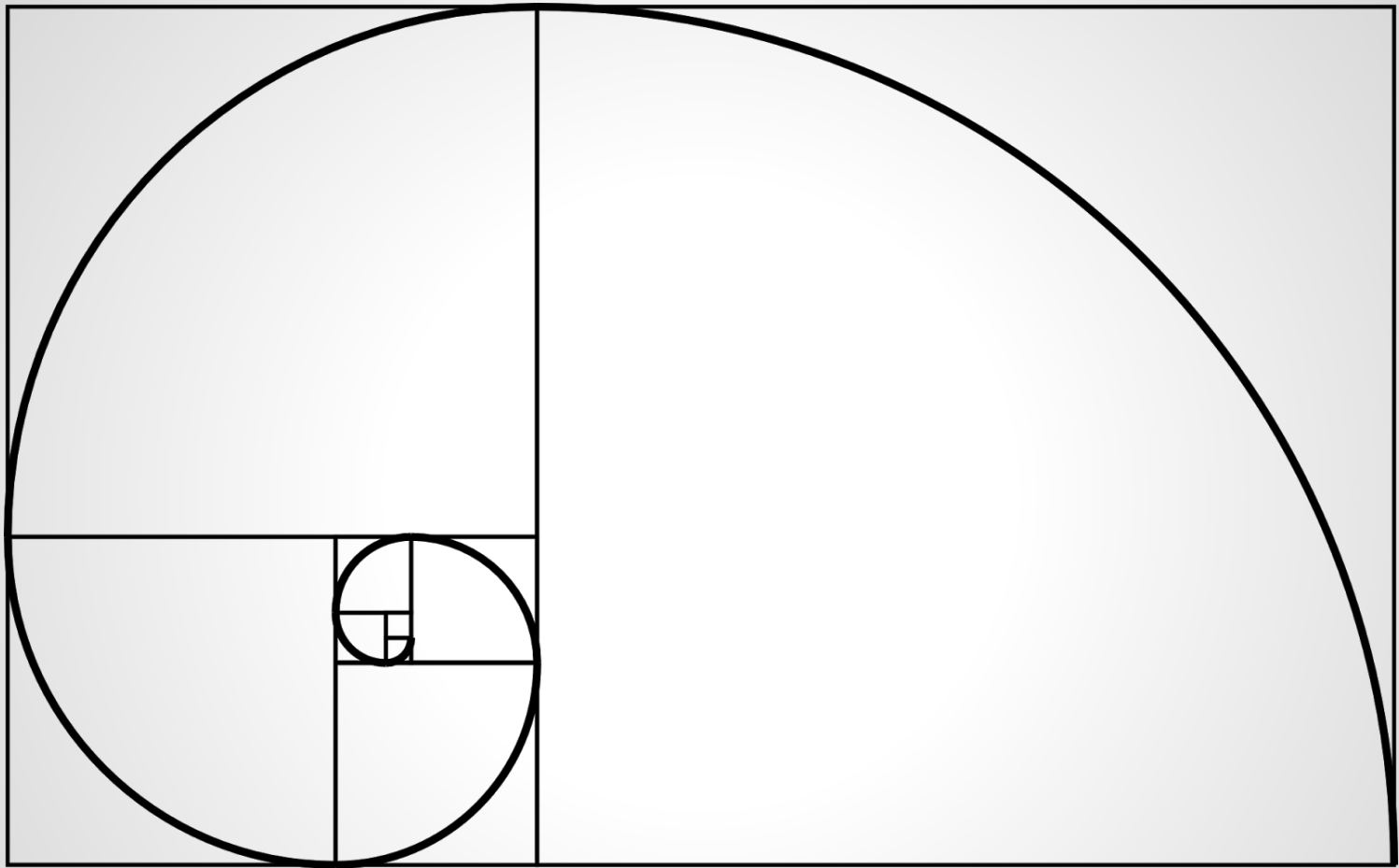


Credit: <http://goo.gl/hGoJ6Y>





Credit: <http://goo.gl/nxEpHF>



Golden Ratio = 0.618 (credit: <http://goo.gl/lq3tWS>)



Credit: <http://goo.gl/9AHmEU>



Use Lightroom to Crop Using Golden Ratio (Overlay - O)

# The Perfect Photo - Exposure

- Factors:
  - Aperture
  - Shutter Speed
  - ISO (Film or Sensor Sensitivity)
- Generally you fix the ISO, but look for “auto” setting (it’s nice!)
- Varying aperture affects the shutter speed, and vice versa

# Exposure Water Bucket Analogy

- A good exposure = a full bucket
- ISO = the size of the bucket
- Aperture = the size of the garden hose
- Shutter Speed = the amount of time it takes to fill the bucket

Credit: <http://goo.gl/bK1Afo>



EV	f-number												
	1.0	1.4	2.0	2.8	4.0	5.6	8.0	11	16	22	32	45	64
-6	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	512 m	1024 m	2048 m	4096 m
-5	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	512 m	1024 m	2048 m
-4	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	512 m	1024 m
-3	8	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m	512 m
-2	4	8	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m	256 m
-1	2	4	8	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m	128 m
0	1	2	4	8	15	30	60	2 m	4 m	8 m	16 m	32 m	64 m
1	1/2	1	2	4	8	15	30	60	2 m	4 m	8 m	16 m	32 m
2	1/4	1/2	1	2	4	8	15	30	60	2 m	4 m	8 m	16 m
3	1/8	1/4	1/2	1	2	4	8	15	30	60	2 m	4 m	8 m
4	1/15	1/8	1/4	1/2	1	2	4	8	15	30	60	2 m	4 m
5	1/30	1/15	1/8	1/4	1/2	1	2	4	8	15	30	60	2 m
6	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	15	30	60
7	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	15	30
8	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8	15
9	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4	8
10	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2	4
11	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1	2
12	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2	1
13	1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4	1/2
14		1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8	1/4
15			1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15	1/8
16				1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30	1/15
17					1/8000	1/4000	1/2000	1/1000	1/500	1/250	1/125	1/60	1/30

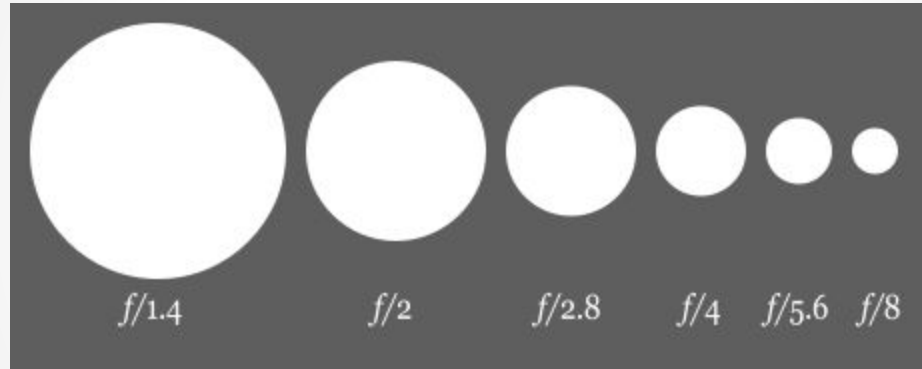
Exposure Value (credit: [http://en.wikipedia.org/wiki/Exposure\\_value](http://en.wikipedia.org/wiki/Exposure_value))

# The Perfect Photo - Aperture vs Shutter Priority

- Aperture Priority when controlling the depth of field is most important
  - Portraits
  - Landscapes
- Shutter Priority when stopping or blurring action is most important
  - Sports
  - Waterfalls



# Aperture - Size of Lens Opening



Credit: <http://en.wikipedia.org/wiki/Aperture>

# Aperture - Controls Depth of Field



large aperture (low number)  
narrow depth of field



small aperture (high number)  
large depth of field

Credit: [http://en.wikipedia.org/wiki/Depth\\_of\\_field](http://en.wikipedia.org/wiki/Depth_of_field)

# Shutter Speed

- Reads as 15, 8, 4, 2, 1, 2, 4, 8, 15, 30, 60, 125, 250, 500, 1000, 2000, 4000, 8000
- ...but really means...
- 15, 8, 4, 2, 1,  $1/2$ ,  $1/4$ ,  $1/8$ ,  $1/15$ ,  $1/30$ ,  $1/60$ ,  $1/125$ ,  $1/250$ ,  $1/500$ ,  $1/1000$ ,  $1/2000$ ,  $1/4000$ ,  $1/8000$

# Effects of Shutter Speed



fast shutter speed



slow shutter speed

Credit: [http://en.wikipedia.org/wiki/Shutter\\_speed](http://en.wikipedia.org/wiki/Shutter_speed)

# Shutter Speed Tip

- Use a tripod if your shutter speed is slower than the reciprocal of your lens focal length
  - i.e., if the focal length is at (or set to) 200, you should use a tripod if your shutter speed is slower than  $1/200$  of a second

# The Perfect Photo - Bracket



Many cameras can do this automatically

# The Perfect Photo - Shoot Raw

- Not compressed (lossless)
- Lower contrast
- More dynamic range
- Better ability to correct over- and underexposed pictures
- Jpeg has 256 levels of brightness vs between 4,096 and 16,384 for raw



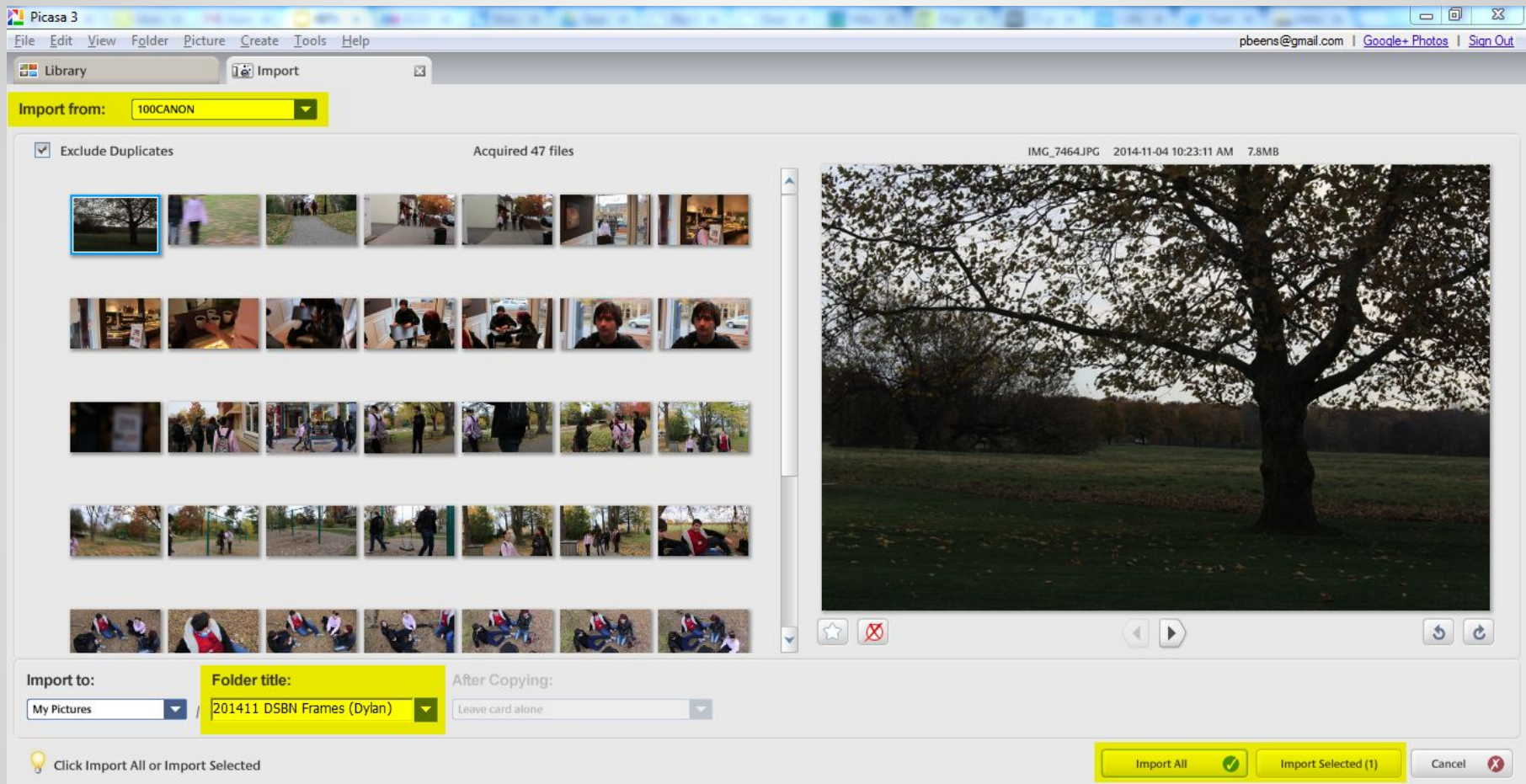
# Raw Example



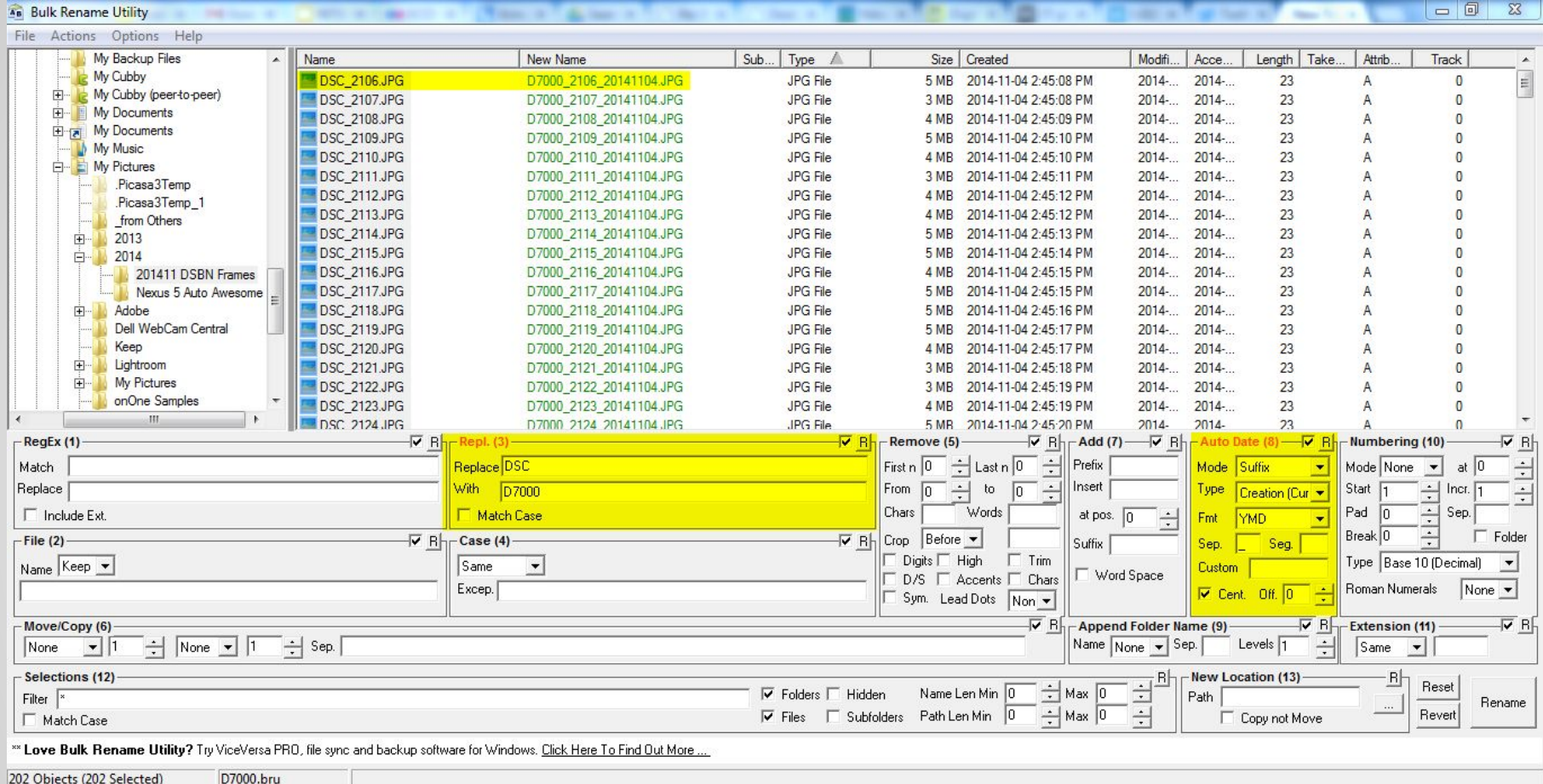
From <http://blog.beens.org/2013/10/night-photography-tip-work-with-raw.html>



# **Transferring and Managing Your Photos**

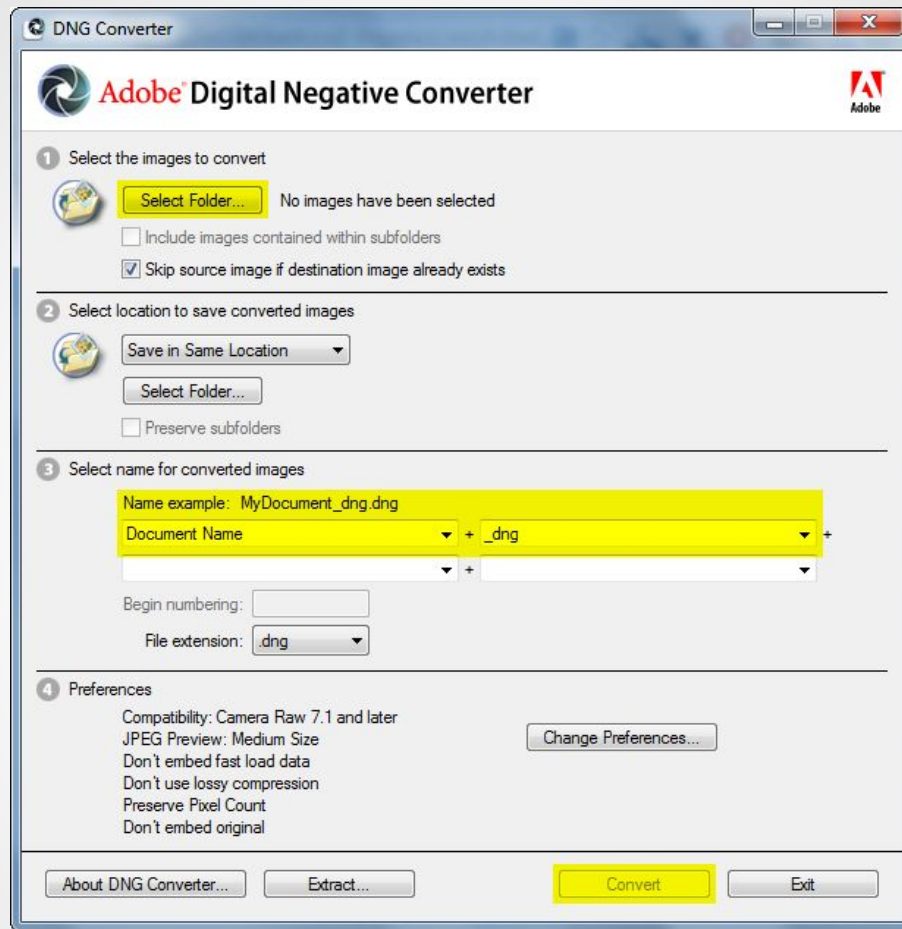


Using Picasa to Import



\*\*\* Love Bulk Rename Utility? Try ViceVera PRO, file sync and backup software for Windows. [Click Here To Find Out More...](http://www.bulkrenameutility.co.uk/)

Bulk Rename Utility (free) - <http://www.bulkrenameutility.co.uk/>



Use Adobe DNG Converter to Convert Raw Photos to DNG Format





Make a caption!

Tags

Type in a tag to add:

+

Tags in D7000\_9663 20131024\_dng-1-3.jpg:

Photowalk

Niagara Falls

man walking

ECOO13

ECOO 2013

D7000

B&W

20131024

201310

17-55mm f/2.8G IF-ED

Quick Tags:

B&W

man walking

ECOO 2014

ECOO14

sign

water

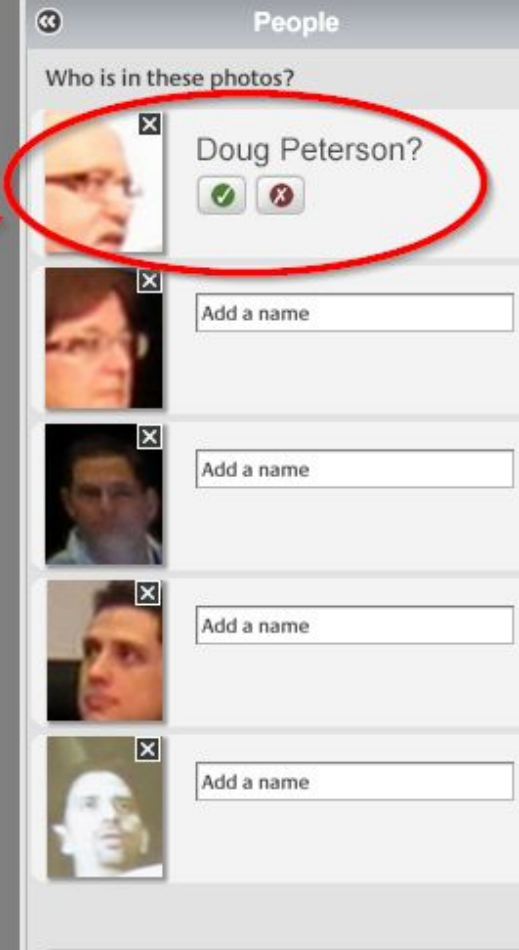
fish

flower

plant

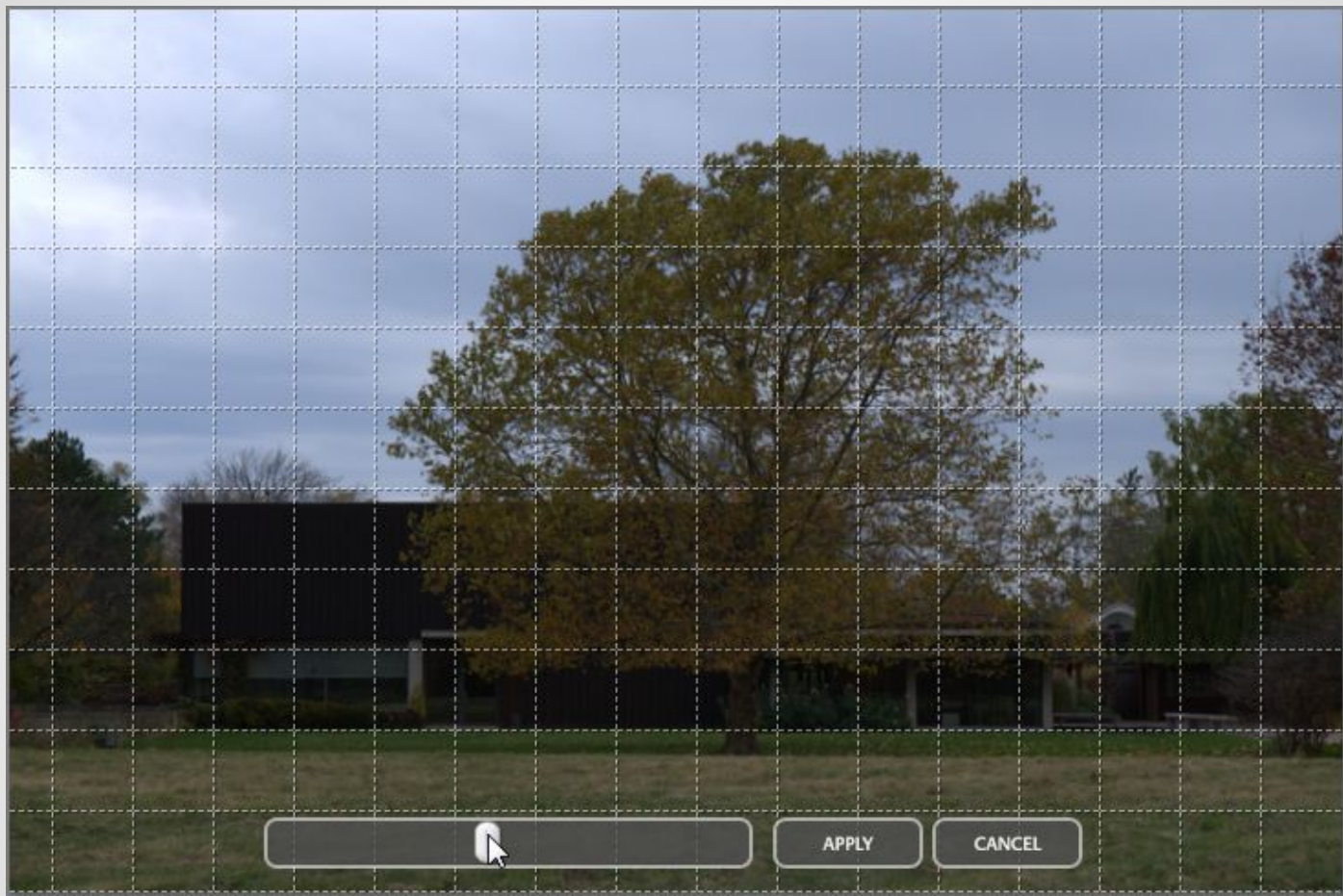
?

Use Picasa to Tag Your Photos



Use Picasa to Recognize (and Tag) People

# Processing Your Photos



Straighten Your Photos (shown in Picasa)





### Retouch blemishes

Click to select the area to fix. Then, move the mouse to see a preview of the replacement area. Click on the image again to finalize. Lather, rinse, repeat. Note: you can use ctrl-drag to pan.

Brush Size



Reset

Undo Patch    Redo Patch

Apply     Cancel 

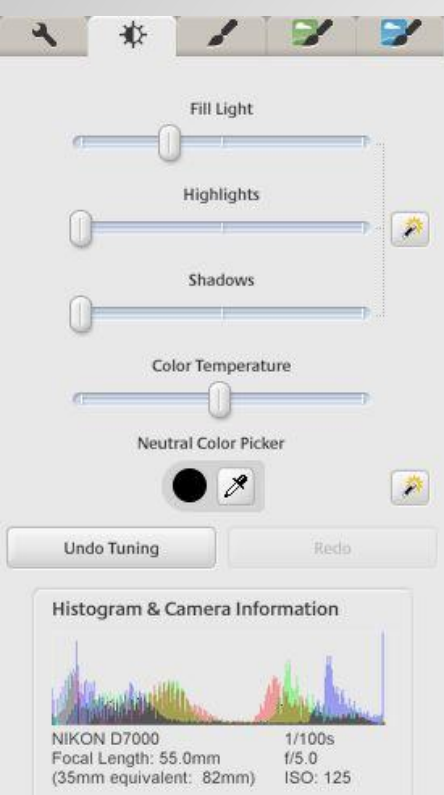
#### Histogram & Camera Information



NIKON D7000    1/100s  
Focal Length: 55.0mm    1/5.0  
(35mm equivalent: 82mm)    ISO: 125



Remove Blemishes (shown in Picasa)



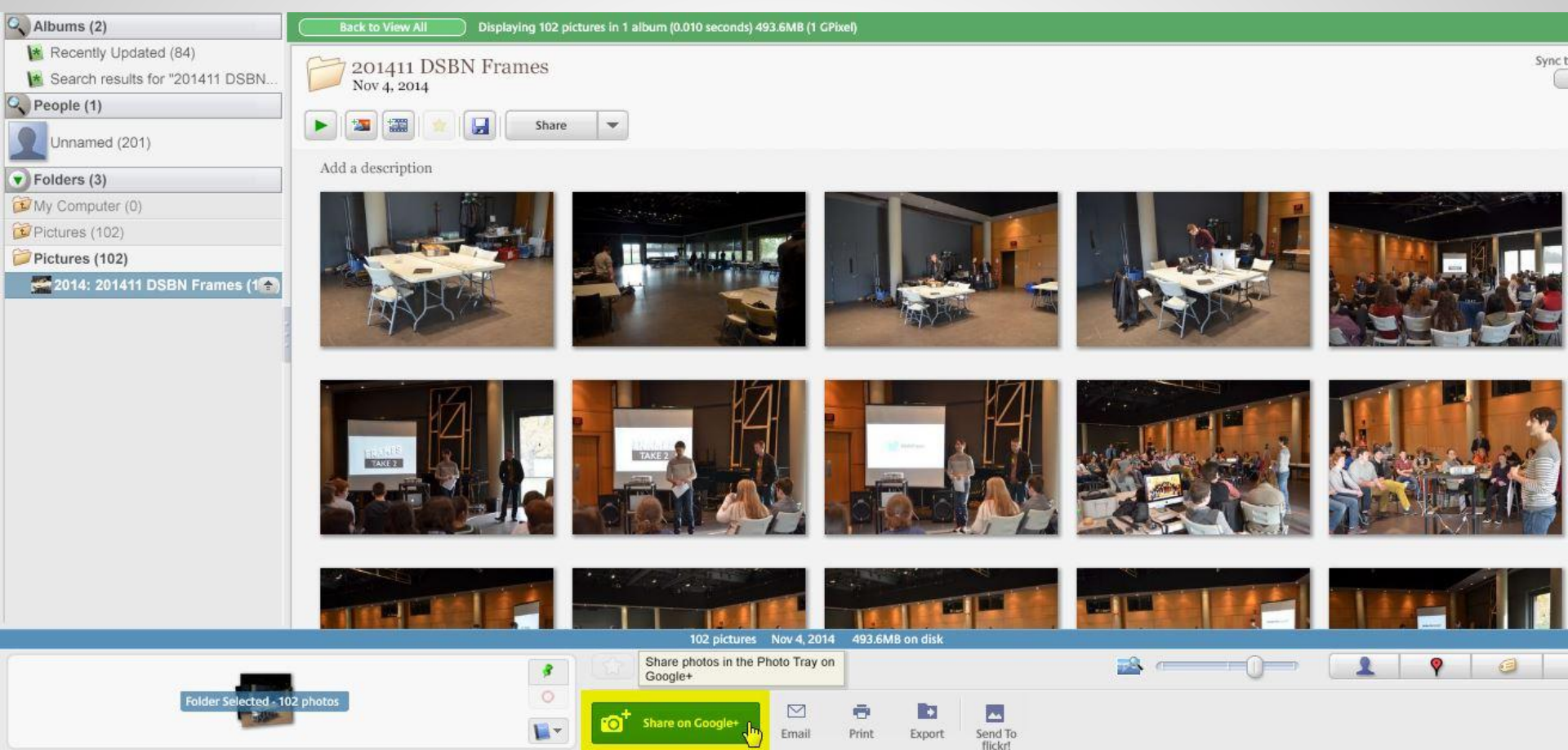
Adjust Tone and Colour Cast (shown in Picasa)



Experiment! (Holga-ish and Cross Process Filters in Picasa)

# **Backing Up Your Photos**





Easy! Just share to Google+ from Picasa

Upload and share on Google+

Create a new Google+ album

201411 DSBN Frames (web quality) + New


 ... and 95 more photos

Image size  
Best for web sharing

Add a message

+ Add circles or people to share with...

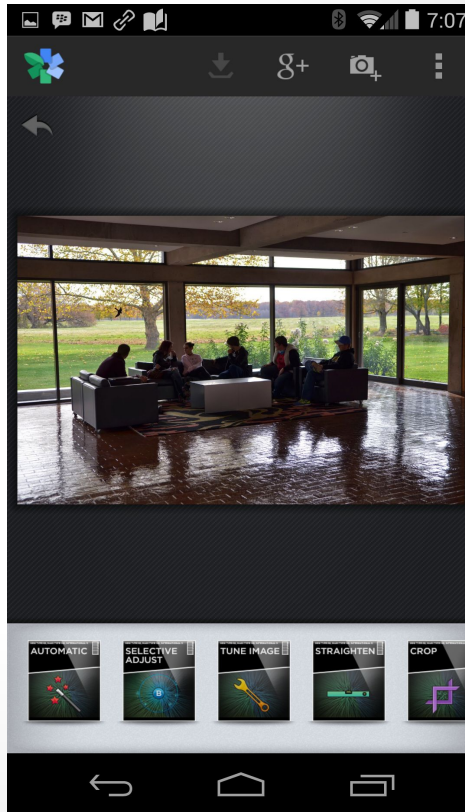
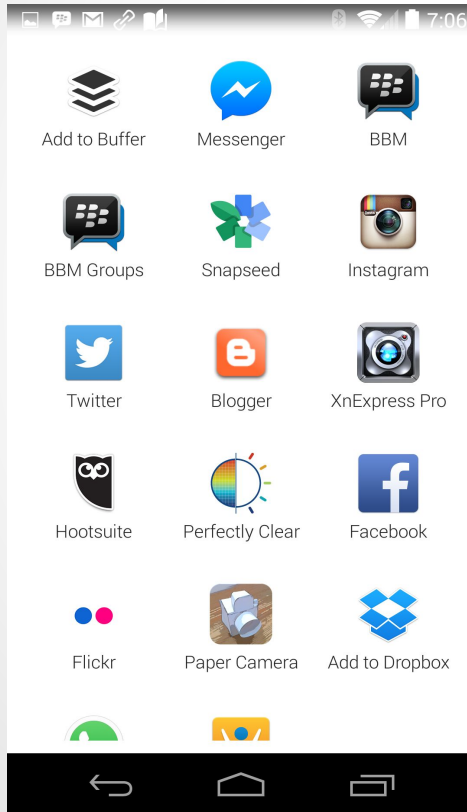
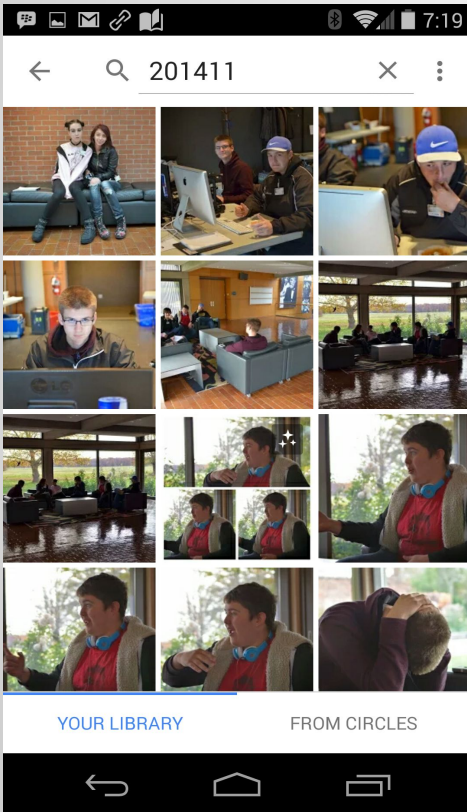
☐ Send email notifications

[Learn more...](#) Upload Cancel

Choose “Web Sharing” to Not Count Against Your Google Quota

# **Editing Any of Your Pictures on Your Smartphone**

# Use Picasa and the Google+ App





# Photowalk

8:30pm to 10:00pm

Colleen Rose (@ColleenKR)

Denise Buttenaar (@butden)

Peter Beens (@pbeens)

# Photowalk Flickr Group

- Join and post your pictures!
- <http://goo.gl/0kP8rA>

# Night Photowalk Tips

- Use a tripod
- Shoot raw
- Pick your spots in advance (safety first!)
- Stop down your lens a few stops
- Underexpose
- To get starburst effect, use a very small aperture (large number)

# Tips (cont'd)

- Use mirror lockup
- Don't touch your camera
- Use self-timer
- Use a higher ISO (sensitivity), but not too high (consider noise)
- Switch to manual focus

Credit: <http://goo.gl/Id6cBk> (last year's Photowalk flickr page)

# Final Thoughts

# Why I Like Picasa

- free
- integrated with Google+ and Gmail
- excellent for fixing and processing images
- non-destructive (saves original pictures in a hidden folder)
- can undo edits at any time
- excellent for tagging and geo-tagging photos
- excellent facial recognition

# Why Backing Up To Google+ Is #AutoAwesome



# Remember...

- “You Don’t *Take* a Photograph, You *Make* a Photograph.”



# Thanks!



Many Thanks to Google for the amazing, free tools!

(credit: <http://www.google.com/doodles/sir-norman-parkinsons-100th-birthday>)