Clinical Photography
Goals

• Communications
• Marketing
• Documentation
• Case presentation
“A picture is worth a thousand words”

One Look Is Worth A Thousand Words--

One look at our line of Republic, Firestone, Miller and United States tires can tell you more than a hundred personal letters or advertisements.

WE WILL PROVE THEIR VALUE BEFORE YOU INVEST ONE DOLLAR IN THEM.

Ever consider buying Supplies from a catalog?

What's the use! Call and see what you are buying. One look at our display of automobile and motorcycle accessories will convince you of the fact.

THAT WE HAVE EVERYTHING FOR THE AUTO

Piqua Auto Supply House
133 N. Main St.—Piqua, O.
Good Photography

• Quality
• Content
• Consistency
If YOU Were the Viewer...
Good, Quality Photography Is All About…?

Hint: The picture is a result…but not what it’s about!
...Controlling Light!
Requirements

• Gear
• Technique
• Style
• Reference
• Practice
Gear

It really does make a difference
Gear

• “Real” SLR camera
• True Macro lens
• Ringlight FLASH is a must have
• Quality power sources
• Willing staff member*
Gear – Camera

• “Real” SLR camera with Optical viewfinder
  • “Cropped” sensors are cheaper
    • Canon Rebel, 70D, 7D2 – 1.6x
    • Nikon “DX” D5100, D500, - 1.5x
    • Most Olympus and Pentax – 2.0x

• “Full-frame” sensors are easier to see through and work with
  • Canon 6D, 5D3, 1DX
  • Nikon “FX” D610, D750, D8x0, D4/5
Gear – Lens

- “Macro” - designed to work close up without distortion
- 100mm in “full-frame” ideal to work with
  - Cropped sensors have multiplication factor – 1.6x/Canon, 1.5x/Nikon
  - Special lenses for cropped cameras – “EF-S”/Canon, “DX”/Nikon

- Canon
  - Full-frame: EF 100/2.8L IS USM
  - Cropped: EF-S 60/2.8 USM (60mm x 1.6 = 96mm equivalent)

- Nikon
  - Full-frame: AF-S Micro-Nikkor 105/2.8G VR IF-ED
  - Cropped: AF-S Micro-Nikkor 60/2.8G ED (60mm x 1.5 = 90mm)
Gear – Lighting

Point Source
- Off center axis
- Casts shadow opposite

Macro Sources
- Around center axis
- Even, shadowless lighting
Gear – Macro Lights

Ring Light
- Easy to control
- Consistent
- Light always 180°

Twin Light
- Fully adjustable
- Must aim correctly
- Can be anywhere in circle
Gear – Ring Light

• Canon – MR-14EX II
• Nikon - Doesn’t have one! (R1C1 Twin only)

• Alternative
  • Nissin MF18
    • Canon or Nikon

• Avoid LED ringlights – not enough power!
Gear - Power

- Most powered by AA or AAA batteries
- Use NiMH for most power and fast recycling
  - Panasonic Eneloop Pro highest capacity
  - Maha PowerEx or Panasonic Eneloop (white)

- Good charger keeps batteries from cooking during charge
  - PowerEx MH-C801D
  - True, controlled 1 Hour charge
  - Keeps extra batteries ready
Technique

Keep it simple
Technique

Configuring the Camera – Operating Mode

- Set camera for “P” or “A” modes
  - Don’t use AUTO or “Scenes”
- “P” mode does more automation
- “A”/“Av” allows more control over settings and flash output
Technique

Configuring the Camera – ISO

• ISO 400, 800 ok on newer cameras. Lower settings wasting power of flash
• Keep as low as possible, higher is noisier
• Can increase to get more usable flash distance
Technique

Configuring the Camera - Focus Mode

- Focus set for One-Shot AF or AF-S
- Canon is always “One Shot”
- Nikon may be labeled “Single-Servo”, “S”, “AF-S”
Technique

Configuring the Camera - Focus Points

• Use center point focus

• Keep point on closest object in focus

• Keep the beep on, it’ll help!
Technique

Holding the Camera

• Held improperly induces more movement and shake

• Support weight of camera with left hand

• Movement worse with more mass
Technique

The Ringlight Flash

• Orient the two tubes in the ring appropriately (red areas)
• Select E-TTL (Canon) or i-TTL (Nikon) mode on flash
• Use focusing lights to help guide the camera to good focus (blue areas)
• Use fresh, NiMH batteries of good quality – it makes a difference!
Style

Define yourself with it!
Style

**Shadowless lighting**

- Don’t use point flash
- Turn the ring appropriately
- Don’t point op chair light into mouth
- Dim or turn off overhead lighting
Style

Light-Grey or Off-White Background

- Don’t use colors
- Don’t use patterns
- Don’t use black

- Clean “eggshell” matte surface drywall
- Background papers from Savage
  - “Arctic White” background paper
  - “Medium Grey” background paper
- Grey cotton duck from fabric store
Style

Proper Orientation, Level, and Expression

- Patient should be standing comfortably with feet flat on ground
- Patient should have arms at side, not crossed, perpendicular to floor
- Pupillary plane parallel to floor
- Shoulders parallel to floor
Style

Proper Orientation, Level, and Expression

- Occlusal plane should be centered and level
- Show surrounding soft tissue
Style

Proper Exposure

- Good, clear details
- No “blown out” whites
- No “blocked up” black patches with no detail
- Too close or too far from subject can keep flash from doing its job
Style

Sharp from Front to Back

- Sharp from closest to farthest tooth
- Needs higher f-stop setting on camera (more depth of field)
- Start at f/16-f/22
- Focus on closest point
Style

Clean, White Lighting

- Stay away from windows
- Avoid mixing light sources
- Turn off overhead lights
- Use the camera’s “Flash” white balance mode
Style

Framing and cropping

• Show the whole image
• Center & level the image on the occlusal plane
• Crop appropriately in the viewfinder
• Retract properly and completely
• Lateral should show incisor angle all the way back to furthest molar, parallel to midline, 90 degrees to side
Style

Framing and cropping

- Show the whole image from front to back
- Use retractorst and mirrors
- Warm mirrors to prevent condensation & fogging
- Parallel and level
- Should be able to see all sides of each tooth
Style

Framing and cropping

- Frontal: nose centered, interpupillary line parallel
  - eyes looking into lens
  - one with lips lightly closed
  - one shot with natural smile

- Lateral: further eyebrow slightly visible, facing to the RIGHT from camera, looking straight ahead

  - Remove glasses, piercings, earrings!
  - Pull hair back or tuck so ears and eyes are completely visible
Style

Models

- Black background
- Remove ALL labeling and patient information
- Center and level on occlusal plane
- Use ring flash and tripod

- Soap and finish completely, no holes, bubbles; trim correctly
- Send to lab if needed for best result
Reference

Don’t fix what’s not broken
Reference

• Record settings that work
• Use same location, op, or area
• Mark locations

• Dedicate a staff member who likes their task*
• Secure dials and buttons
• Keep accessories in easy to remember location

• Update and clean gear on a schedule

• Create a comp card of proper shots for reference
Strive to create the reference each time!
Practice

Give the squeaky wheel some grease
Practice

- Try different settings to learn what changes
- Try different locations to see how image is affected
- Establish a practice time for honing skills
- Pay attention to the rough spots!
- Group review imaging
Discussion

• Gear
• Technique
• Style
• Reference
• Practice
Gear – Full Frame (Canon), $2,700

- **Camera:** Canon 6D - $1,399

- **Lens:** Canon 100/2.8 USM - $599
  - [http://www.bhphotovideo.com/c/product/194451-USA/Canon_4657A006_100mm_f_2_8_USM_Macro.html](http://www.bhphotovideo.com/c/product/194451-USA/Canon_4657A006_100mm_f_2_8_USM_Macro.html)

- **Flash:** Canon MR-14EX II - $549

- **Batteries:** Canon LP-E6N - $65
  - [http://www.bhphotovideo.com/c/product/1081825-REG/canon_9486b002_lp_e6n_battery_f_7d_mark.html](http://www.bhphotovideo.com/c/product/1081825-REG/canon_9486b002_lp_e6n_battery_f_7d_mark.html)
Gear – Cropped (Canon), $2,100

• Camera: Canon 70D - $999

• Lens: Canon 100/2.8 USM - $469
  • [http://www.bhphotovideo.com/c/product/371176-USA/Canon_0284B002_EF_S_60mm_f_2_8_Macro.html](http://www.bhphotovideo.com/c/product/371176-USA/Canon_0284B002_EF_S_60mm_f_2_8_Macro.html)

• Flash: Canon MR-14EX II - $549

• Batteries: Canon LP-E6N - $65
Gear – Full Frame (Nikon), $2,577

• **Camera:** Nikon D610 - $1,496

• **Lens:** Nikkor 60/2.8G ED -$597
  - [http://www.bhphotovideo.com/c/product/545660-USA/Nikon_2177_AF_S_Micro_Nikkor_60mm_f_2_8G.html](http://www.bhphotovideo.com/c/product/545660-USA/Nikon_2177_AF_S_Micro_Nikkor_60mm_f_2_8G.html)

• **Flash:** Nissin MF18 Macro- $439

• **Batteries:** Nikon EN-EL15 - $45
  - [http://www.bhphotovideo.com/c/product/735929-REG/Nikon_27011_EN_EL15_Lithium_Ion_Battery_1000mAh.html](http://www.bhphotovideo.com/c/product/735929-REG/Nikon_27011_EN_EL15_Lithium_Ion_Battery_1000mAh.html)
Gear – Cropped (Nikon), $2,177

• Camera: Nikon D7200 - $1096

• Lens: Nikkor 60/2.8G ED - $597
  • http://www.bhphotovideo.com/c/product/545660-USA/Nikon_2177_AF_S_Micro_Nikkor_60mm_f_2_8G.html

• Flash: Nissin MF18 Macro - $439
  • http://www.bhphotovideo.com/c/product/832690-REG/Nissin_NDMF18_N_MF18_Macro_Flash.html

• Batteries: Nikon EN-EL15 - $45
  • http://www.bhphotovideo.com/c/product/735929-REG/Nikon_27011_EN_EL15_Lithium_Ion_Battery_1000mAh.html
Gear – General, $115

• **Flash batteries:** 12x AA Panasonic Eneloop PRO
  $18/set of 4 - get 3 sets!

• **AA charger:** Maha/Powerex MH-C801D - $61
  • [http://www.bhphotovideo.com/c/product/883786-REG/Powerex_MH_C801D_8_Cell_1_Hour_Charger.html](http://www.bhphotovideo.com/c/product/883786-REG/Powerex_MH_C801D_8_Cell_1_Hour_Charger.html)