



Prepared by Evan Craine (evan.craine@wsu.edu)

- Computer + Monitor
 - You will [install a Linux operating system](#) onto this machine
 - Check with Nathan Miller (nathan.miller@wisc.edu) re: correct version to install
 - [Dell Optiplex 9010 SFF Computer, Intel Core i5-3470 3.2 GHz, 16 GB RAM, 2 TB HDD, DVD-RW, Windows 10 \(Renewed\)](#)
- External Harddrive
 - For image backup and storage off of computer
 - Option 1
 - [WD 5TB Elements Portable External Hard Drive, USB 3.0 - WDBU6Y0050BBK-WESN](#)
 - Option 2
 - [LaCie Rugged Raid Shuttle 8TB External Hard Drive Portable HDD - USB-C USB 3.0 Compatible, Drop Shock Dust Water Resistant, for Mac and PC Computer Desktop Laptop, 1 Mo Adobe CC \(STHT8000800\)](#)
- Barcode Scanners
 - 1D and 2D for flexibility (QR code = 2D)
 - Handsfree Option (what we use with NIR analyzer)
 - [TEEMI Handsfree 1D 2D Barcode Scanner, with Top Trigger Button, QR Omnidirectional Desktop USB Automatic Bar Code Imager, Capture Screen barcodes, TMSL-60 White](#)
 - Wireless with Trigger Mode, Continuous Scan Mode and Auto-Sensing Mode (what we use with scanning system)
 - [TEEMI Bluetooth Barcode Scanner with USB Cradle, 1D 2D QR Wireless USB Imager with Vibration Alert for iOS Android Devices, Max 300 Yards Transfer Range, Handsfree Screen Scanning](#)
- Flatbed Scanners



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- Unit will depend on resolution needs, size, cost, etc.
 - We found that 1200 dpi works well as a balance between resolution and time for image capture
 - The unit below has capability for 4800 dpi optical resolution
- Epson Perfection V39 Color Photo & Document Scanner with Scan-To-Cloud & 4800 Optical Resolution, Black
- https://www.amazon.com/gp/product/B00SSXQ7Q2/ref=ppx_yo_dt_b_asin_title_o03_s00?ie=UTF8&psc=1
- **USB cables to connect scanners**
 - You may need to create additional USB ports on the machine
 - [One option](#)
 - USB cable length depends on how far your scanners are from the computer USB ports
 - We purchased 6, 6-ft cables for 6/8 scanner (2/8 scanners had sufficient stock cable lengths)
 - [Micro USB Cable Android Charger, JSAUX \(2-Pack 6.6FT\) Micro USB Android Charger Cable Nylon Braided Cord Compatible with Galaxy S7 S6 J7 Edge Note 5, Kindle. MP3 and More-Red](#)
 - This option also comes in a 3.3ft+6.6ft option and a 6.6ft+10ft option
- **Vacuum**
 - Helpful for removing small seeds from scanners
 - Use a piece of cardboard cut to the scanner width as a “squeegee” to move all the seeds to the bottom edge before vacuuming
 - Cordless option
 - [BLACK+DECKER dustbuster Handheld Vacuum, Cordless, 16V \(CHV1410L\)](#)
 - (battery will be depleted if using for more than 6 hours)



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- **Seed Corral** 🐒
 - Useful for keeping seeds on scanner in the desired field of view



- - **Printed sheets to streamline workflow**



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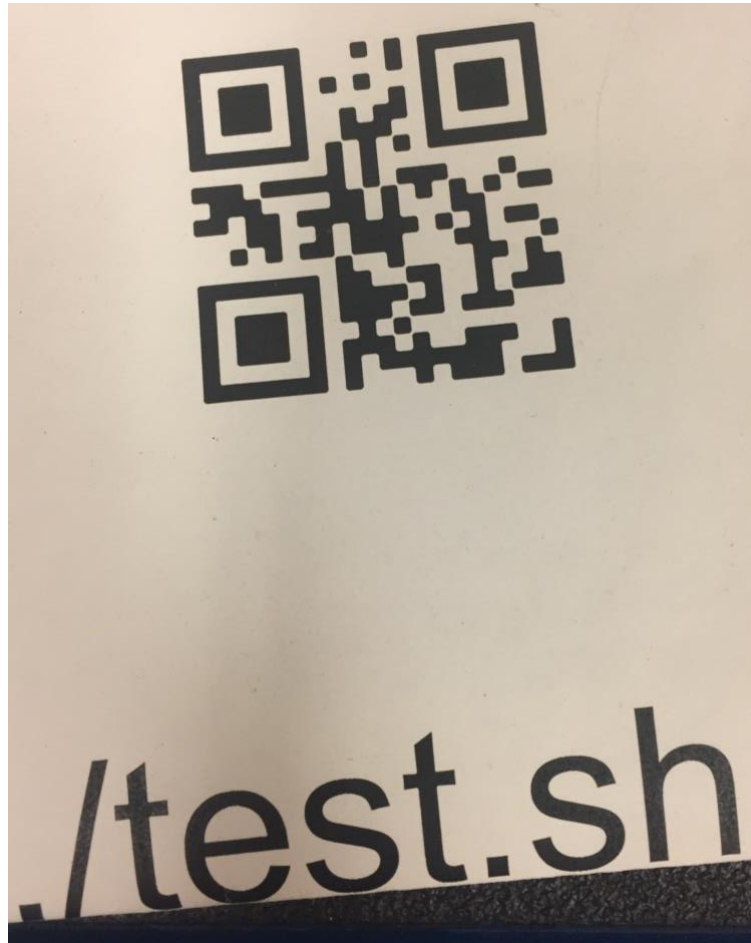
- Create QR codes with readable text to scan as needed to assist with the required actions; this will depend on your system and needs
- Set file path for working directory





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- Start command





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- Scanner and corresponding sample ID
 - Ex. scan scanner ID (WHITE) < SPACE < Packet ID < SPACE;
repeat with next scanner and sample)
 - This paper is taped to a cardboard box, spray painted matte/flat black inside to create a dark background (you may need a different color background depending on seed colors)
 - We now use a blue background. The underside of the scanner lid, acting as the image background, has been painted using the flat, matte paint colour "[Blueberry Festival](#)", which can be characterized by red, green and blue values 73, 139, and 184, respectively and HEX #498BB8 (Valspar Paints, Cleveland, Ohio, U.S.).



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