

# Langerhans Lab Major Equipment Inventory

## NC STATE UNIVERSITY

Category	Item	Information
<b>Compact Cameras</b>	Canon D10	-waterproof, shockproof blue camera, 12 megapixel, 3x optical zoom, 35-105mm f/2.8-4.9 lens, decent amount of control; purchased 2009 - Decent easy-to-use all-weather field camera, decent underwater camera (be careful to fully close the compartments now as it has shorted out before), ok video quality
	Canon G12 (& underwater case)	- 10 megapixel, lots of control, RAW images, HD video, converter for adding lenses and filters, 28-140mm f/2.8-4.5 lens; purchased 2011 - Good field camera with nice manual control features, can photo well for color and morphology in field; just short of SLR quality and control; pretty decent video quality
<b>dSLR Cameras</b>	Canon Rebel XTi	- 10 megapixel; purchased 2008 - 2 <sup>nd</sup> morphometrics station; pretty good, uses Compact Flash memory
	Canon Rebel XS	- 10 megapixel, live view; purchased 2010 - Primary morphometrics station; good all-around SLR, HD video
	Canon Rebel T3i (& underwater case)	- 18 megapixel; purchased 2011 - field use and morphometrics station as needed; nice all-around SLR, HD video
<b>SLR Lenses</b>	2 Sigma 50mm macro f2.8 lenses	- photographing small specimens
	2 Kenko teleconverter 1.5x lenses	- 50% greater magnification for photographing small specimens
	1 Canon 50mm macro f2.5 lens	- photographing small specimens (not quite as good as Sigma lenses), macro lens for HSV
	1 Sigma 17-70mm f2.8-4 macro lens	- field/everyday use, lab HSV use for versatile needs
	1 Tamron 75-300mm f4-5.6 macro lens	- field zoom lens
	1 Canon 18-55mm f3.5-5.6	- field/everyday use, use with T3i underwater case

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<b>Video Cameras</b>	GoPro Hero HD video camera (& many accessories)	- Field, underwater, action use; usually stored at Yates Mill - underwater case, tripod mount, battery bacpac, headgear, extra batteries
	2 Sony Handycam DCR-SR68 camcorders	- 80GB internal memory, 60x optical zoom, SD memory card capability - mate-choice and behavioral experiments (decent quality); at Yates Mill
	2 EverFocus EQ550 low-light security cameras (w/ 1/3" 6-60mm varifocal auto iris lenses)	- used with AVerDiGi NV3000 PCI card for viewing video on computer - behavioral experiments in G8, dark-room use for night-time monitoring and cave fish work
<b>Memory Cards</b>	2GB Compact Flash	- for Canon Rebel XTi
	2GB SD	- extra available card
	2GB SD	- for Leica EZ4D microscope
	8GB SDHC	- for Canon Rebel XS
	8GB SDHC	- for Canon D10
	16GB SDHC (Class 10)	- for Canon Rebel T3i
	32GB SDHC	- for Canon G12
32GB SDHC (Class 10)	- for GoPro Hero	
<b>High-Speed Video Cameras</b>	IDT N4-S1 camera w/ 1.25GB memory	- 1016 x 1016 resolution, 3.5 sec at 500Hz, up to 2000Hz, Ethernet connection, 6000 ISO
<b>Tripods</b>	2 standard Kodak black tripods	- portable with carrying case, good for field use
	1 standard silver Vivitar tripod	- portable with carrying case, good for field use
	1 good semi-portable tripod (Davis & Sanford Attaras Grounder Tripod)	- good for local field use (tough for long hikes or international travel)
	1 really good tripod (Manfrotto 190XDB with 701HDV)	- for HSV camera, etc.
<b>Camera Paraphernalia</b>	Gray camera bag	- old, falling apart now
	Black camera bag for SLR and a couple of lenses	- good
	Small black SLR camera bag	- good

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<b>Camera Paraphernalia (cont.)</b>	Small black camera bag for GoPro Hero	- good
	UV filter (58mm)	- fits on 50mm SLR lenses and the adapter tube for the G12
	Lens cleaning materials (sprays, cloth, Q-tips, blower brush)	- we have several sets of these, in various camera bags and in lab
	Memory card readers	
	Screen protectors	
<b>Lighting</b>	~7-8 fiber lights	- good, standard gooseneck fiber-optic lights
	Replacement bulbs	- be sure to use correct replacement bulbs (in lab and at Yates Mill)
	~2-4 standard flood lights	- decent lighting for really general use
	Infrared LED light strips, power supply, connectors	- good for lighting dark rooms where video cameras will be able to easily see, but fish won't really see any light
<b>Data Storage</b>	4GB flash drive	- all decent; 16GB and 32GB are pretty good and fast
	16GB flash drive	
	32 GB flash drive	
	Lacie 80 GB external hard drive	- small by today's standards, and not very fast; at Yates Mill
	Seagate 1 TB external hard drive	- good, fast
<b>Lap Laptop</b>	West. Digital 3 TB ext. hard drive	- good, fast (manual backup for server)
	lomega 1.5 TB ext. hard drive	- good, fast (automatic backup for server)
	Dell Latitude E5420 (2.3GHz, 4GB RAM, 500GB HD)	- typical uses: spectrophotometer, field HSV camera recording, behavioral experiments at Yates Mill or G6
<b>Tools</b>	Hammers, pliers, wrenches, screwdrivers, levels	- at Yates Mill, roller tool cabinet - some in lab
	Portable tool kit (2)	- 1 in lab, 1 at Yates Mill
	Jigsaw	- at Yates Mill, roller tool cabinet - decent for cutting acrylic/plexiglass (use clamps to hold sheets in place)
	DeWalt portable drill	- at Yates Mill, roller tool cabinet; good drill
	DeWalt mitre saw	- at Yates Mill, on top of roller tool cabinet; great for cutting pvc, wood, etc.

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NC STATE UNIVERSITY

Category	Item	Information
<b>Collecting Gear</b>	Seines (~4)	- some at Forfar, some in lab
	Dip nets	- ~6 at Forfar, ~3 in lab/Yates Mill
	Cast net	- 1 in lab
	Collapsible fish traps	- ~25 at Yates Mill, ~10 at Forfar
	Metal minnow traps	- ~4 at Yates Mill
	Plastic minnow traps	- ~4 at Yates Mill
	Plankton nets	- 1 153um, 1 80um; at Yates Mill or in YSI bag
<b>Field Meters / Water Quality</b>	2 handheld GPS units (Garmin GPSMAP 78)	- good; at Yates Mill
	Velocity Meter (Global Water ?)	- good; at Yates Mill
	YSI 85 and hard case	- good; at Yates Mill
	YSI Pro2030 and soft case	- good; at Yates Mill
	2 Turbidimeters	- good; at Yates Mill
	2 pH meters (Hanna HI 98128)	- good; at Yates Mill
	Secchi Disk	~1-2 at Forfar; 1 at Yates Mill
<b>Field Data Recorders</b>	4 HOBO, reader, software	- good; in lab
	12 thermochron iButtons	- good; in lab
<b>Field Data Collection</b>	Notebooks	- all in lab
	Rite-in-the-Rain paper	
	Underwater paper	
	Clipboards	
<b>Purchased Software</b>	SigmaPlot	- all in lab software drawer or in "Programs" folder on server
	Endnote	
	Photoshop CS 5.1	
	Paintshop Pro 7	
	Quicktime Pro	
	Helicon Focus	
	HOBOWare	

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<b>Site-licensed Software</b>	JMP	- all available through NCSU
	SAS	
	MS Office	
<b>Useful Free Software</b>	Tps Suite	
	FastStone Image Viewer	
	ImageJ	
	Quicksand	
<b>Live Fish Transport</b>	Breather bags	- in lab
	Fish bags	- in lab
	Bag buddies	- in lab or at Yates Mill
	Coolers	- ~2-3 at Yates Mill or in lab
<b>Experiment Materials</b>	Plexiglass	- at Yates Mill
	80/20 materials	- at Yates Mill
<b>Color Analysis</b>	JAZ Spectrometer System & accessories	- at Yates Mill
	Digital photography gear:	
	Styrofoam photo box Color checkers, etc.	- at Forfar - at Yates Mill