

**LMG**  
**Science Equipment/Systems Allocation**  
**ANALYTICAL INSTRUMENTS AND EQUIPMENT**

Product(s)	Quantity on Hand
<b>Autoclave</b>	
Autoclave, sterilizer, top-loading, 50 L capacity, 105 °C to 135 °C sterilization temp, timer, programmable, Hirayama HV-50.	1
Autoclave, sterilizer, top-loading, 75 L capacity, 115 °C to 135 °C sterilization temp, timer, programmable, Sanyo MLS-3781L.	1
<b>Aquarium</b>	
Aquarium, glass, 10 gallon, 20" L x 10" W x 12" H.	5
<b>Balance</b>	
Balance, analytical, w/ draft shield, digital, 310 g x 0.0001 g (max capacity x readability), 8.9 cm diameter pan, Scientech SA-310 (for use in port at Punta Arenas, Chile unless otherwise requested).	1
Balance, analytical, w/ draft shield, digital, 320 g x 0.0001 g (max capacity x readability), 9 cm diameter pan, Mettler New Classic MF, MS304S/03 (for use in port at Punta Arenas, Chile unless otherwise requested).	1
Balance, analytical, w/ draft shield, digital, 320 g x 0.0001 g (max capacity x readability), 9 cm diameter pan, Mettler MS304TS/00 (for use in port at Punta Arenas, Chile unless otherwise requested).	1
Balance, marine scale, motion compensated, digital, max capacity 1.5 kg, resolution 0.1 g to 0.3 kg; 0.2 g to 0.6 kg; 0.5 g to 1.5 kg, 12 cm x 12 cm pan, POLS S-182.	1
Balance, topload, digital, 3200 g x 0.01 g (max capacity x readability), 17 cm x 20 cm diameter pan, Mettler MS3002S (for use in port at Punta Arenas, Chile unless otherwise requested).	1
Balance, topload, digital, 2100 g x 0.01 g (max capacity x readability), 16.5 cm x 16.5 cm pan, Mettler PG2002-S.	2
Scale, cargo, digital, 400 lbs x 0.5 lbs / 180 kg x 0.2 kg, 12" x 12".	2
Scale, hanging, spring with hook, 50 g x 50 g division, Pesola Macro-Line 80005.	2
Scale, hanging, spring with hook, 50 g x 50 g division / 10 lb x 2 oz division (has both scales), Pesola Macro-Line 80015.	1
Scale, hanging, spring with clip, 1000 g x 10 g division, Pesola Medio-Line 41000.	1
Scale, hanging, spring with hook, 2500 g x 20 g division, Pesola Medio-Line 42500.	1
<b>Bath, Circulating</b>	
Bath, circulating, digital, -24 °C to +150 °C, stability +/- 0.01 °C, ID 8.8" x 9.4" x 9", 18.1 L, Neslab RTE-17.	1
Bath, circulating, digital, -25 °C to +150 °C, stability +/- 0.01 °C, ID 9.3" x 10" x 6", 12.1 L, Neslab RTE-211D.	1
Bath, circulating, digital, -20 °C to +100 °C, ID 5.3" x 4.8" x 5", 5.4-6.5 L, Polystat 1C6.	1
Bath, circulating, digital, -28 °C to +100 °C, ID 6.8" x 7.2" x 5", 6.8-8.6 L, Polystat 1C15.	2

Bath, circulating, digital, -30 °C to +130 °C, 5 L, Polyscience 9101.	1
<b>Bath, Ultrasonic</b>	
Bath, ultrasonic cleaner, ID 11.5" x 6" x 6", 5.7 L, timer to 60 min, Branson 3510R-MT.	1
<b>Burner</b>	
Burner, alcohol, 4 oz.	2
<b>Centrifuge</b>	
Centrifuge, micro, non-refrigerated, variable speed up to 13,200 rpm / 16,110 x g rcf, timer to 99 min, Eppendorf 5415D.	2
Rotor, fixed angle, 45°, 24-place x 1.5/2 mL microfuge tubes, conical, 11 mm bore, 13,200 rpm max / 16,110 x g rcf max, F-45-24-11 for Eppendorf 5415D.	3
Centrifuge, micro, non-refrigerated, variable speed up to 15,060 rpm / 21,300 x g rcf, timer to 9 hr 59 min, Eppendorf 5425.	2
Rotor, fixed angle, 45°, 24-place x 1.5/2 ml microfuge tubes, conical, 11 mm bore, aerosol-tight, 15,060 rpm max / 21,300 x g rcf max, FA-24x2 for Eppendorf 5425.	2
Centrifuge, micro, refrigerated, -11 °C to +40 °C, variable speed up to 16,220 rpm / 25,001 x g rcf, timer to 9 hr 59 min, Eppendorf 5427R.	2
Rotor, fixed angle, 45°, 30-place x 1.5/2 ml microfuge tubes, conical, 11 mm bore, aerosol-tight, 14,000 rpm max / 20,817 x g rcf max, FA-45-30-11 for Eppendorf 5427R.	1
Centrifuge, micro, refrigerated, -9 °C to +40 °C, variable speed up to 16,400 rpm / 25,000 x g rcf, timer to 99 min, Eppendorf 5417R.	1
Rotor, fixed angle, 45°, 24-place x 1.5/2 mL microfuge tubes, conical, 11 mm bore, aerosol-tight, 16,400 rpm max / 25,000 x g rcf max, FA-45-24-11 for Eppendorf 5417R.	2
Rotor, fixed angle, 45°, 30-place x 1.5/2 mL microfuge tubes, conical, 11 mm bore, aerosol-tight, 14,000 rpm max / 20,800 x g rcf max, FA-45-30-11 for Eppendorf 5417R.	2
Centrifuge, benchtop, refrigerated, -20 °C to +40 °C, variable speed up to 18,000 rpm, timer to 9 hr 59 min, Beckman Allegra X-30R.	1
Rotor, fixed angle, 25°, 10-place x 15 mL conical bottom tubes, 10,000 rpm max / 10,416 x g rcf max, C1015 for Beckman Allegra X30-R.	1
Rotor, fixed angle, 25°, 6-place x 50 mL conical bottom tubes, 10,000 rpm max / 10,304 x g rcf max, C0650 for Beckman Allegra X-30R.	1
Rotor, fixed angle, 25°, 8-place x 50 mL round bottom tubes, 11,400 rpm max / 13,682 x g rcf max, F0850 for Beckman Allegra X-30R.	1
Rotor, fixed angle, 30°, 6-place x 30 mL round bottom tubes, 18,000 rpm max / 28,305 x g rcf max, F0630 for Beckman Allegra X-30R.	1
Rotor, fixed angle, 45°, 24-place x 1.0/1.5/2.0 mL, 18,000 rpm max / 29,756 x g rcf max, F2402H for Beckman Allegra X-30R.	1
Rotor, fixed angle, 45°, 30-place x 1.5/2.0 mL, 16,000 rpm max / 28,672 x g rcf max, FX301.5 for Beckman Allegra X-30R.	2
Rotor, swinging bucket, microplate/microtiter, 2-6 x microplate, 3,000 rpm max / 1,109 x g rcf max, S2096 for Beckman Allegra X-30R.	1
Centrifuge, benchtop, non-refrigerated, variable speed up to 16,000 rpm, timer to 99 hr 59 min, Thermo Scientific Sorvall ST 8.	1

Rotor, swinging bucket, 8-place x 50 mL conical bottom tubes, 4,500 rpm max / 3,260 x g rcf max, TX-150 for Thermo Scientific Sorvall ST 8.	1
Rotor, fixed angle, 45°, 6-place x 50 mL conical bottom tubes, 9,500 rpm max / 12,108 x g rcf max, HIGHConic III for Thermo Scientific Sorvall ST 8.	1
Rotor Adapter, 1-place x 15 mL conical bottom tube, for use with TX-150 and HIGHConic III rotors for Thermo Scientific Sorvall ST 8.	1
<b>Conductivity</b>	
Conductivity Salinity Temperature Meter, handheld, measures conductivity (0 to 200 mS/cm), salinity (0 to 80 ppt), and temperature (-5 °C to +95 °C), 10 ft cable, YSI 30.	1
<b>Counter</b>	
Counter, hand held, 1 place, 4 digits (0 - 9999).	7
Counter, laboratory, 1 place, 3 digits (0 - 999).	1
Counter, laboratory, 2 place, 3 digits (0 - 999).	1
Counter, laboratory, 8 place, 3 digits (0 - 999), with totalizing place.	2
<b>Crimper</b>	
Crimper, hand operated, for 20 mm seals, Wheaton 224303, W225303.	2
<b>Dessicator</b>	
Dessicator, vacuum, polycarbonate with plate, inside diameter 19.7 cm, plate diameter 19 cm, volume 0.2 cu ft, holds 29.9" Hg vacuum at room temp for 24 hrs, Scienceware F42020.	1
<b>Dewar</b>	
1 L Liquid Nitrogen Dewar, for liquid nitrogen storage. Lid fastens with clips so can be used as a transportable vessel for use in the field.	1
4 L Liquid Nitrogen Dewar, for liquid nitrogen storage.	2
35 L Liquid Nitrogen Dewar, with sample canisters/cryo canes for sample storage.	6
50 L Liquid Nitrogen Dewar, for liquid nitrogen storage.	5
60 L Liquid Nitrogen Dewar, with sample canisters/cryo canes for sample storage.	2
160 L Liquid Nitrogen Dewar, for liquid nitrogen storage.	8
<b>DI Water</b>	
Water Purification System, Aqua Solutions RODI-C-12BL, Reverse osmosis + Type I Ultra-low TOC Biological grade DI system, installed in Hydro Lab.	1
Water Purification System, Barnstead E-Pure D4641, 4 module, Type 1 reagent grade water, installed in Wet Lab.	1
<b>Dispenser</b>	
Dispenser, bottle top, 0.2 mL fixed vol, Repipet Jr, 770200. Glass bottle included.	1
Dispenser, bottle top, 1 mL fixed vol, Hirschmann Ceramus 9312100. Glass bottle included.	2
Dispenser, bottle top, 0-1 mL, glass, Repipet Jr.	1
Dispenser, bottle top, 0.2-1 mL, Hirschmann Ceramus 9312000. Glass bottle included.	2
Dispenser, bottle top, 0.4-2 mL, Hirschmann Ceramus 9322000. Glass bottle included.	5
Dispenser, bottle top, 0.1-2.5 mL, Brinkmann Chemsaver, 02-22-090-0. Glass bottle included.	1

Dispenser, bottle top, 0.25-2.5 mL, Fisherbrand 13-615-10. Glass bottle included.	3
Dispenser, bottle top, 0.5-5 mL, Digital, Brand, Dispensette III 4701331. Glass bottle included.	3
Dispenser, bottle top, 1-5 mL, Hirschmann Ceramus 9332000, Eppendorf 4961 000.020. Glass bottle included.	3
Dispenser, bottle top, 0.2-10 mL, Fisherbrand. Glass bottle included.	1
Dispenser, bottle top, 1-10 mL, Fisherbrand 13-615-12. Glass bottle included.	1
Dispenser, bottle top, 2-10 mL, Hirschmann Ceramus 9342000, Brinkmann Chemsaver 022-22-110-8, Eppendorf Varispenser Plus 4961 000.039. Glass bottle included.	2
Dispenser, bottle top, 5-25 mL, Brinkmann Chemsaver 022-22-120-5. Glass bottle included.	2
Dispenser, bottle top, 5-30 mL, Hirschmann Ceramus 9352000. Glass bottle included.	1
Dispenser, bottle top, 10-60 mL, Hirschmann Ceramus 9362000. Glass bottle included.	2
Dispenser, bottle top, 20-100 mL, Brinkmann 022-22-050-1. Glass bottle included.	2
Dispenser, micrometer burette, glass, 2 mL, Gilmont GS-1200-A.	1
<b>Filtration</b>	
Base, glass, 25 mm, glass frit support, with clamp.	38
Funnel, glass, 25 mm, 1000 mL.	1
Funnel, glass, 25 mm, 15 mL.	33
Funnel, glass, 25 mm, 150 mL.	9
Funnel, glass, 25 mm, 300 mL.	10
Base, glass, 47 mm, glass frit support, with clamp.	8
Funnel, glass, 47 mm, 300 mL.	8
Base, polysulfone, 25 mm, twist-lock, autoclavable, Pall-Gelman 4204.	4
Funnel, polysulfone, 25 mm, 50 mL, twist-lock, autoclavable, Pall-Gelman 4204.	4
Base, polysulfone, 25 mm, twist-lock, autoclavable, Pall-Gelman 4203.	33
Funnel, polysulfone, 25 mm, 200 mL, twist-lock, autoclavable, Pall-Gelman 4203.	33
Base, polysulfone, 47 mm, with clamp, autoclavable, Nalgene DS0315-0047.	6
Funnel, polysulfone, 47 mm, 250 mL, with clamp, with polypropylene cover, autoclavable, Nalgene DS0315-0047.	6
Base, polyphenylsulfone, 47 mm, magnetic, autoclavable, Pall-Gelman 4242.	6
Funnel, polyphenylsulfone, 47 mm, 300 mL, magnetic, autoclavable, Pall-Gelman 4242.	6
Manifold, vacuum, 3-place, PVC. Request 3/8" ID tubing in the Consumables and Supplies section: "Tubing" - "Rubber, Vacuum" - "3/8" ID, 7/8" OD, 1/4" wall, black", Cole-Parmer 96143-08.	1
Manifold, vacuum, 6-place, PVC. Request 3/8" ID tubing in the Consumables and Supplies section: "Tubing" - "Rubber, Vacuum" - "3/8" ID, 7/8" OD, 1/4" wall, black", Cole-Parmer 96143-08.	6
Manifold, vacuum, 6-place, SS. Request 3/8" ID tubing in the Consumables and Supplies section: "Tubing" - "Rubber, Vacuum" - "3/8" ID, 7/8" OD, 1/4" wall, black", Cole-Parmer 96143-08.	1
Pump, vacuum, oil-less, diaphragm, max pressure 60 psi, max vacuum 25.5" Hg, w/ gauges, Gast DOA-P104-AA, GAST DOA-P704-AA. Request 3/8" ID tubing in the Consumables and Supplies section: "Tubing" - "Rubber, Vacuum" - "3/8" ID, 7/8" OD, 1/4" wall, black", Cole-Parmer 96143-08.	9
Vacuum Trap, carboy, 20 L, glass. Request 3/8" ID tubing in the Consumables and Supplies section: "Tubing" - "Rubber, Vacuum" - "3/8" ID, 7/8" OD, 1/4" wall, black", Cole-Parmer 96143-08. (Glass filtration flasks are available in the Consumables and Supplies section).	3

Vacuum Trap, carboy, 20 L, PP (polypropylene), heavy duty, with quick vent caps, Nalgene 2226-0050. Request 3/8" ID tubing in the Consumables and Supplies section: "Tubing" - "Rubber, Vacuum" - "3/8" ID, 7/8" OD, 1/4" wall, black", Cole-Parmer 96143-08. (Glass filtration flasks are available in the Consumables and Supplies section).	10
<b>Filtration, Other</b>	
Filter Holder, in-line, 47 mm, polycarbonate, Pall-Gelman 1119. Request 1/4" ID tubing in the Consumables and Supplies section: "Tubing" - "Rubber, Vacuum" - "1/4" ID, 1/2" OD, 1/8" wall, red", VWR 62995-059.	11
<b>Flowmeter</b>	
Flowmeter, mechanical, with standard rotor, for net sampling, speed range approx. 1/5 knots to 15 knots, General Oceanics 2030R.	5
<b>Fluorometer</b>	
Fluorometer, 10-AU, benchtop/field, water-tight case, digital, configured for discrete samples, spreadsheet interface software, Turner Designs 10-AU-005. Please select required accessories. Request Chlorophyll standards in Stocked Chemicals section: "Chlorophyll". Disposable borosilicate cuvettes can be requested in the Consumables and Supplies section: "Culture tubes: glass disposable" - "13 x 100 mm, for fluorometers", VWR 47729-572.	3
Cuvette Adapter, for 25mm and 13mm tubes, Turner Designs 10-AU-030, 10-229-1A.	4
Cuvette, tube, 13 mm x 100 mm, borosilicate, reusable, Turner Designs 10-031.	4
Cuvette, tube, 25 mm x 150 mm, borosilicate, reusable, Turner Designs 10-028A.	10
Individual filters available upon request.	
Optical Kit, ammonium/CDOM, Turner Designs 10-303. Turner Designs optical kits include excitation and emission filters, lamp, and attenuator plate when required.	1
Optical Kit, chlorophyll-a, extractive (acidification method) and chlorophyll in vivo, Turner Designs, 10-037R. Turner Designs optical kits include excitation and emission filters, lamp, and attenuator plate when required.	1
Optical Kit, chlorophyll-a, extractive (non-acidification method), Turner Designs, 10-040R. Turner Designs optical kits include excitation and emission filters, lamp, and attenuator plate when required.	1
Optical Kit, rhodamine WT, Turner Designs, 10-041R. Turner Designs optical kits include excitation and emission filters, lamp, and attenuator plate when required.	1
Solid Standard, secondary, red, for chlorophyll a and rhodamine analysis, Turner Designs 10-AU-904.	3
Fluorometer, 10-AU, benchtop/field, water-tight case, digital, configured for continuous flow, spreadsheet interface software, Turner Designs 10-AU-005. Please select required accessories. Request Chlorophyll standards in Stocked Chemicals section: "Chlorophyll".	1
Continuous flow cuvette system, 25mm, Turner Designs 10-AU-020.	2
Individual filters available upon request.	
Optical Kit, ammonium/CDOM, Turner Designs 10-303. Turner Designs optical kits include excitation and emission filters, lamp, and attenuator plate when required.	1
Optical Kit, chlorophyll-a, extractive (acidification method) and chlorophyll in vivo, Turner Designs, 10-037R. Turner Designs optical kits include excitation and emission filters, lamp, and attenuator plate when required.	1

Optical Kit, chlorophyll-a, extractive (non-acidification method), Turner Designs, 10-040R. Turner Designs optical kits include excitation and emission filters, lamp, and attenuator plate when required.	1
Optical Kit, rhodamine WT, Turner Designs, 10-041R. Turner Designs optical kits include excitation and emission filters, lamp, and attenuator plate when required.	1
Temperature Compensation Package, for continuous flow system, Turner Designs 10-AU-500.	2
Fluorometer, Trilogy, benchtop, color touch screen, for discrete samples, sample chamber accepts snap-in optical modules (modules accommodate 10 mm x 10 mm cuvettes), USB interface, Trilogy spreadsheet interface software, Turner Designs 7200-002. Please select required accessories. Request Chlorophyll standards in Stocked Chemicals section: "Chlorophyll".	1
Cuvette Adapter, for 12 mm tubes, Turner Designs 016-0810. Request 12 x 75 mm tubes in Basic Supplies and Consumables section: "Culture tubes, Glass disposable".	1
Optical Module, for chlorophyll-a extracted (acidification), w/ light source and filters, Turner 7200-040-W, use with glass or quartz only, Turner 7000-955 recommended.	1
Optical Module, for chlorophyll-a extracted (non-acidification), w/ light source and filters, Turner 7200-046-W, use with glass or quartz only, Turner 7000-955 recommended.	1
Optical Module, for chlorophyll-a in vivo, qualitative analysis only, w/ light source and filters, Turner 7200-043, methacrylate cuvettes, Turner 7000-959, recommended.	1
Optical Module, for ammonium, w/ light source and filters, Turner 7200-067, methacrylate cuvettes, Turner 7000-959, recommended.	1
Solid Standard, secondary, red, adjustable, for use with chlorophyll, rhodamine, phycocyanin and phycoerythrin modules, Turner Designs 8000-952.	1
<b>Freezer/Refrigerator</b>	
Freezer, -20 °C, upright, heavy duty, 11.5 cu ft, Kenmore, Dry Lab.	1
Freezer, flammable storage, -20 °C to -12 °C, upright, 20.6 cu ft, Dry Lab, Fisher Scientific Isotemp, 13-986-149.	1
Freezer, flammable storage, -24 °C to -12 °C, underbench, 5 cu ft, Hydro Lab, Thermo Scientific 05FFEETSA.	1
Freezer, ultra-low, -86 °C to -50 °C, upright, 19.4 cu ft, Wet Lab, Thermo Scientific Revco UXF40086A62.	1
Freezer, ultra-low, -86 °C to -50 °C, upright, 13.4 cu ft, Hydro Lab, Revco ULT1386-9-D34.	1
Freezer, ultra-low, -86 °C to -50 °C, upright, 19.4 cu ft, Hydro Lab, Thermo Scientific Revco RDE40086FA.	1
Refrigerator, +1 °C to +12 °C, flammable storage, undercounter, 5.5 cu ft, Wet Lab, Thermo Scientific 05FREETSA.	1
Refrigerator, +1 °C to +12 °C, flammable storage, undercounter, 5.5 cu ft, Hydro Lab, Thermo Scientific Isotemp 05FREEFSA, 97-938-1.	1
<b>Furnace</b>	
Muffle Furnace, digital, programmable temperature control, 4 programs, 16 segments per program, +204 °C to +982 °C continuous (3 hours), +982 °C to +1093 °C (intermittent), ID 14" W x 14" D x 14" H, 1.6 cu ft, 45L, Thermolyne 30400, Model F30438CM.	1
<b>Homogenizer</b>	

Homogenizer, w/ stand, variable speed range from 10,000 to 30,000 rpm, PRO Scientific, PRO 250.	1
Generator, 10 mm diameter x 150 mm long saw tooth bottom, capacity 1.5 to 100 mL, 13 m/s max peripheral speed in medium, PRO Scientific 02-10150.	1
Generator, 10mm diameter with 50 mL ST Series sealed tube assembly (ST-50), capacity 5-40 mL, 13 m/s max peripheral speed in medium, PRO Scientific 15-32050.	1
<b>Hood</b>	
Hood, fume absorber, portable, 31.5x25" working space, 87 cu ft/min, Captair Labx. Request appropriate filter below.	1
Filter for Acid Vapors.	
Filter for Ammonia/Amines.	
Filter for Formaldehyde use.	
Filter for Organic Vapors.	
Hood, fume, 25" D x 39" W working area, installed in Hydro Lab, Labconco Basic 47.	1
Hood, fume, 25" D x 39" W working area, installed in Wet Lab, Labconco Basic 47.	1
Hood, fume, 25" D x 39" W working area, installed in Dry Lab, Labconco Basic 47.	1
Hood, vertical laminar flow workstation, bench model, interior dimensions 31" W x 23" D x 18" H, w/ HEPA filters, ISO 5/class 100, AirClean Systems AC600 Series, AC632LF.	2
Hood, vertical laminar flow workstation, bench model, tall, interior dimensions 31" W x 23" D x 27" H, w/ HEPA filters and UVtect Automatic Safety Controller, ISO 5/class 100, AirClean Systems AC600 Series, AC632TLFC.	1
Hood, vertical laminar flow workstation, bench model, interior dimensions 31" W x 23" D x 20" H, w/ HEPA filters, UVtect Automatic Safety Controller, and 254 nm short-wave UV light, ISO 5/class 100, AirClean Systems AC600 Series, AC632LFUVC.	1
Hood, laminar flow, Envirco Mac 10 HEPA, 2' x 4', 120 V, for Trace Metal Use.	2
Filter, HEPA for MAC 10, 9" thickness, standard filter, Envirco 69600S-001HAPXX (HEPA).	
Hood, Laminar Flow, Enclosure w/ Blower, LM Air Technology.	1
Hood, snorkel, portable, ceiling mounted, 3-joint, Alsident System 100, Model 100-10585-3-5.	2
<b>Hot Plate/Stirrer</b>	
Hot Plate/Stirrer, 4" x 4", 30 °C to 500 °C, ceramic top, VWR Model 610-HPS Standard, 12365-346.	1
Hot Plate/Stirrer, 5" x 7", 5 °C to 550 °C, digital temperature display, digital speed display, ceramic top, Corning Model PC-420D, 6795-420.	1
Hot Plate/Stirrer, 7" x 7", 30 °C to 550 °C, ceramic top, Fisher Scientific Isotemp 11-600-49SH.	1
Hot Plate/Stirrer, 7" x 7", +5 °C above ambient to 500 °C, ceramic top, VWR NO97042-634.	1
Stir Plate, 5" x 7", ceramic top, Corning Model PC-410.	1
Stir Plate, 7" x 7", ceramic top, VWR/Henry Troemner LLC Model 620-S Standard, 12365-380.	2
<b>Ice Maker</b>	
Ice Maker, flake ice, up to 400 lbs in 24 hrs, 80 lbs storage, installed in Hydro Lab, Scotsman AFE424A-1A.	1
<b>Incubator</b>	

Incubator, lab, upright, lighted, low-temp, -10 °C to +44 °C (with lights on), -15 °C to +44 °C (with lights off), +/- 0.5 °C, 515 µmol/m <sup>2</sup> /s, LED lights, 29.7 cu ft interior space, 10.8 sq ft shelf space, Wet Lab, Percival Model LT-36VLC8.	1
<b>Irradiance</b>	
Irradiance sensor, scalar, quantum, for PAR measurement, handheld, w/ 1.9 cm diameter spherical irradiance collector, calibrated for use in water or air, digital output, w/ laptop and software, Biospherical Instruments QSL-2100.	1
Irradiance sensor and datalogger kit, LI-COR: Includes LI-1500 Light Sensor Data Logger, digital output; 2 ea quantum sensors, LI-190/R, for PAR measurement, calibrated for use in air, w/ 2003S mounting and leveling fixture and 15 foot cable; 1 ea underwater quantum sensor, LI-192, for PAR measurement, calibrated for use in air and water, w/ 3 meter underwater cable P/N 222UWB-3.	1
Light meter, digital, three-range: 0 to 200/2000/20,000 lux (0 to 20/200/2000 foot-candles), accuracy +/-3% of reading in two narrowest ranges; +/-5% of reading in widest range, max resolution 10 lux (1 foot-candle), General DLM2000.	1
<b>Liquid Scintillation Counter</b>	
Liquid Scintillation Counter, Perkin Elmer Tri-Carb B2910TR, w/ laptop and QuantaSmart software. Computer controlled, for detecting low activity alpha, beta and gamma radioactivity. If requested, you must also request a rad van under the Systems tab.	4
Rack Adapters, vented microtube holders, for 1.5 mL tubes, 11 mm diameter, Perkin Elmer 6013402. For use with racks for 20 mL scintillation vials.	300
Racks for 20 mL scintillation vials, each rack holds 12 vials.	32
Racks for 7 mL scintillation vials, each rack holds 18 vials.	57
Standards, quenched, 14C, set of 10, 5 mL, Perkin Elmer 6007601A.	1
Standards, quenched, 3H, set of 10, 5 mL, Perkin Elmer 6007600A.	1
Standards, unquenched, set of 3 (blank, 3H, 14C), 15 mL, Perkin Elmer 6008500A.	1
<b>Microscope</b>	
Cold Stage, for compound scope, used with slides, Instec, Inc., STC200, TS62.	3
Cold Stage, for dissecting scope, used with petri dishes, Instec, Inc., STC200, TS62.	1
Illuminator, Dolan-Jenner Fiber-Lite 181-1, MI-150F, MI-150RL, w/ 150 watt halogen lamp, EEG2823 dual gooseneck fiber optic light guides, LH-759 focusing lenses.	9
Imaging, digital camera, SLR, Canon, EOS 60D, w/ microscope adapters for Nikon E800, Zeiss Standard 25, SMZ1500, Leica/Wild M3C.	2
Imaging, digital camera, Spot Insight Color Mosaic, 4.0 Mp, IN1420. Comes with computer, monitor and current software. Installed on Nikon E800.	1
Imaging, digital camera, Spot RT3 Slider, monochrome and color (-43 °C diff. cooling w/o IR filter), 2.0 Mp, RT2540. Comes with computer, monitor and current software. Installed on Nikon E800.	1
Imaging, smart phone camera adapter, SnapZoom Universal Digiscoping Adapter.	3
Micrometer, stage, 0.02 mm - 0.1 mm - 1.0 mm = 22 mm, Leica 13K27970.	2
Microscope, compound, brightfield, darkfield, DIC, epi-fluorescence, phase contrast (10X), polarizing, Nikon E800.	1
Epi-Fluorescent Filter, BLUE LP (Long Pass), Chroma 11001, installed on Nikon E800.	1



Epi-Fluorescent Filter, DAPI, Chroma 31000, installed on Nikon E800.	1
Epi-Fluorescent Filter, FITC, Chroma 31001, installed on Nikon E800.	1
Epi-Fluorescent Filter, Green, Chroma 11002.	1
Epi-Fluorescent Filter, Neutral Density, Nikon HM 92028.	1
Epi-Fluorescent Filter, TRITC(Rhodamine)/Dil, Chroma 31002, installed on Nikon E800.	1
Epi-Fluorescent Filter, Wide Blue, AG Heinze 11012v2.	1
Eyepiece, CFI UW 10X/25 (field number: 25), installed on Nikon E800.	2
Objective, 10X/0.30/PH1/DLL, INF/0.17, Plan Fluor, Nikon 93171, installed on Nikon E800.	1
Objective, 20X/0.45/DIC L, INF/0-2, ELWD, Plan Fluor, Nikon 93150.	1
Objective, 20X/0.75/DIC M, INF/0.17, Plan Apo, Nikon 93104, installed on Nikon E800.	1
Objective, 40X/0.65/PH2, 160/0.17, Plan, Zeiss 4546134.	1
Objective, 40X/0.95/DIC M, INF/0.11-0.23, Plan Apo, Nikon 93105, installed on Nikon E800.	1
Objective, 60XA/1.40 Oil/DIC H, INF/0.17, Plan Apo, Nikon 93113, installed on Nikon E800.	1
Objective, 100X/1.30 Oil/DIC H, INF/0.17, Plan Fluor, Nikon 93144, installed on Nikon E800.	1
Reticle, diameter 27 mm, grid, 10 mm x 10 mm, 100 squares total, 1 mm x 1 mm each, Klarmann Rulings KR-406.	1
Reticle, diameter 27 mm, grid, 10 mm x 10 mm, 100 squares total, 1 mm x 1 mm each. Also has a horizontal 10mm scale with 100 divisions above the grid. Klarmann Rulings KR-407.	1
Microscope, compound, brightfield, epi-fluorescence, phase contrast, Zeiss Standard 25.	1
Epi-Fluorescent Filter, DAPI/FITC/Acridine Orange, Zeiss.	1
Epi-Fluorescent Filter, DAPI/TRITC, Zeiss.	1
Epi-Fluorescent Filter, TRITC, Zeiss.	1
Filter, 18mm, green interference, for phase contrast, Zeiss 467859-9901.	1
Objective, 40X/0.65, 160/0.17, Plan, Zeiss 460700.	1
Objective, 40X/0.75/Ph2, 160/0.17, Zeiss.	1
Objective, 100X/1.25 Oil, 160/-, Zeiss 4131111.	1
Objective, 100X/1.25 Oil, 160/-, Zeiss 46190007.	1
Objective, 100X/1.25 Oil/Ph3, 160/0.17, Plan, Zeiss 461933.	1
Microscope, stereo, epi-fluorescence, brightfield, darkfield, Nikon SMZ1500, comes with 10X eyepieces and 1X objective (details below).	1
Eyepiece, C-W10XA/22 (field number: 22), Nikon, installed on SMZ1500.	2
Illuminator, Nikon NI-150, w/ 150 watt halogen lamp, EEG2823 dual gooseneck fiber optic light guides, LH-759 focusing lenses.	1
Objective, 1X, WD = 54mm, Plan Apo HR, Nikon, installed on SMZ1500.	1
Microscope, stereo, dissecting, w/ 5 step (0.64X, 1.0X, 1.6X, 2.5X, 4.0X) magnification changer, Leica/Wild M3C. Comes with standard base, 10X eyepieces and 1.0X objective (details below).	4
Base, standard, incident light base, w/ 320 mm post, Leica 424300, installed on scope.	4
Base, transmitted light base, for brightfield/darkfield, illuminated, w/ 320 mm post, Leica TL4000 BPDF, 10450124.	2
Eyepiece, 10X/21B (field number: 21), wide-field eyepiece for eyeglass wearers, Leica 445111, installed on scope.	8
Eyepiece, 16X/14B (field number: 14), wide-field eyepiece for eyeglass wearers, Leica 445301.	2
Eyepiece, 25X/9.5B (field number: 9.5), wide-field eyepiece for eyeglass wearers, Leica 445302.	2
Illuminator, Dolan-Jenner Fiber-Lite 181-1, MI-150F, MI-150RL, w/ 150 watt halogen lamp, EEG2823 dual gooseneck fiber optic light guides, LH-759 focusing lenses.	9

Objective, 0.5X, WD = 187 mm, Leica 10422563.	2
Objective, 1.0X, WD = 89 mm, PlanApo, Leica 445355, installed on scope.	4
Objective, 1.5X, WD = 49 mm, Leica 10422562.	1
Objective, 2.0X, WD = 27 mm, Leica 422561.	1
Reticle, scale, 12 mm x 120 divisions, full crosshairs, Leica 376119.	1
Vibration Free Slab/Platform, tabletop isolation platform, max 270 lbs @ 80 psi, 20" x 24" surface, Kinetic Systems Inc., Vibraplane Model 2210 Benchmate.	2
Vibration Free Table, Micro-g vibration isolation table, Technical Manufacturing Corp 63-510, installed in Microscope Room under Nikon E800.	1
<b>Oven</b>	
Oven, Forced convection, +10 °C above ambient to 260 °C, distribution accuracy +/- 2.5 °C @210 °C, ID 17.7"W x 17.7"D x 17.7"H, approx. 90L, Installed in Hydrolab, Yamato DKN402.	1
Oven, gravity convection, +5 °C above ambient to +200 °C, uniformity +/- 4.0 °C, ID 20" W x 19" D x 28" H, 6.1 cu ft, VWR 1326.	1
Oven, gravity convection, +40 °C to +260 °C, uniformity +/- 3 °C @ 100 °C, ID 19" W x 15" D x 18" H, 3.0 cu ft, 85 L, Thermo/Lindberg/Blue M GO1390A-1.	1
Oven, vacuum, +6 °C above ambient to +260 °C, uniformity +/- 3.5 °C, ID 12" W x 18" D x 12" H, 1.5 cu ft, 42.5 L, Thermo/Lindberg/Blue M VO1218C-1.	1
<b>Oxygen Titrator</b>	
Oxygen Titrator, Langdon automated amperometric. Comes as kit w/ burette and stepper motor, dual platinum titration electrode (Accumet 13-620-123), stir plate, Socorex bottletop dispensers (0.25-2.0 mL, Calibrex 520.002; 1-10 mL, Calibrex 520.010; or equivalent), 1000 mL amber glass bottles, laptop and software, and other necessary items (please request chemicals under 'Chemicals' section).	2
Sample Flasks, glass, 125mL, calibrated, Pyrex 5400.	144
<b>pH Meter</b>	
pH Meter, benchtop, measures pH/mV/RmV/ORP/temperature, pH range -2.000 to 20.000, resolution 0.1/0.01/0.001 pH, 1-5 point calibration, automatic (w/ ATC probe) or manual temperature compensation, Thermo Scientific, Orion Star A211.	1
pH Electrode, pH/ATC triode, gel filled, pH range 0 - 14, BNC and Mini-DIN connectors, 1 meter cable, Thermo Scientific, Orion ROSS Ultra, 8107BNUMD. Temperature connector is compatible with the Orion Star A211 and A321 meters to provide automatic temperature compensation. Request buffers in Stocked Chemicals section: "Buffers, PH 4, 7 and 10".	1
pH Electrode, pH/ATC triode, gel filled, pH range 0 - 14, BNC and Mini-DIN connectors, 3 meter cable, Thermo Scientific, Orion ROSS Ultra, 8107UWMMD. Temperature connector is compatible with the Orion Star A211 and A321 meters to provide automatic temperature compensation. Request buffers in Stocked Chemicals section: "Buffers, PH 4, 7 and 10".	2
pH Meter, portable, measures pH/mV/RmV/ORP/temperature, pH range -2.000 to 20.000, resolution 0.1/0.01/0.001 pH, 1-5 point calibration, automatic (w/ ATC probe) or manual temperature compensation, Thermo Scientific, Orion Star A321.	1

pH Electrode, pH/ATC triode, gel filled, pH range 0 - 14, BNC and Mini-DIN connectors, 1 meter cable, Thermo Scientific, Orion ROSS Ultra, 8107BNUMD. Temperature connector is compatible with the Orion Star A211 and A321 meters to provide automatic temperature compensation. Request buffers in Stocked Chemicals section: "Buffers, PH 4, 7 and 10".	1
pH Electrode, pH/ATC triode, gel filled, pH range 0 - 14, BNC and Mini-DIN connectors, 3 meter cable, Thermo Scientific, Orion ROSS Ultra, 8107UWMMD. Temperature connector is compatible with the Orion Star A211 and A321 meters to provide automatic temperature compensation. Request buffers in Stocked Chemicals section: "Buffers, PH 4, 7 and 10".	2
<b>Pipettor</b>	
Pipettor, Pipet-Aid, portable, accepts 1 to 100 mL serological pipets, 3.3mL/sec, Drummond 4-000-100.	2
Pipettor, Pipet Helper, accepts 1 to 100 mL serological pipets, Eppendorf 022-23-000-0.	1
Pipettor, adjustable volume, 0.1-2 µL, VWR VE 2.	2
Pipettor, adjustable volume, 0.2-2 µL, Gilson P2.	2
Pipettor, adjustable volume, 0.5-10 µL, VWR VE 10.	2
Pipettor, adjustable volume, 1-10 µL, Gilson P10.	4
Pipettor, adjustable volume, 1-10 mL, Gilson P10 mL.	3
Pipettor, adjustable volume, 10-100 µL, Gilson P100, Eppendorf Research 100, VWR VE 100.	6
Pipettor, adjustable volume, 100-1000 µL, Gilson P1000, VWR VE 1000.	8
Pipettor, adjustable volume, 500-5000µL/1000-5000 µL, Gilson P5000, VWR VE 5000.	8
Pipettor, adjustable volume, 2-20 µL, Gilson P20, Eppendorf Research 20, VWR VE 20.	9
Pipettor, adjustable volume, 20-200 µL/50-200 µL, Gilson P200, Rainin PR-200.	9
Pipettor, adjustable volume, 50-250 µL, VWR VE250.	2
Pipettor, fixed volume, 1000 µL, VWR FE 1000.	1
Pipettor, fixed volume, 100 µL, VWR FE 100, Eppendorf 2000 Series.	3
Pipettor, fixed volume, 10 µL, VWR FE 10.	1
Pipettor, fixed volume, 200 µL, VWR FE 200.	1
Pipettor, fixed volume, 20 µL, VWR FE 20.	1
Pipettor, fixed volume, 250 µL, VWR FE 250.	1
Pipettor, fixed volume, 25 µL, VWR FE 25.	1
Pipettor, fixed volume, 500µL, VWR FE 500.	1
Pipettor, fixed volume, 50µL, VWR FE 50.	1
Pipettor, fixed volume, 5µL, VWR FE 5.	1
Pipettor, repeater, 2-5000 µL, Eppendorf 4780, 22260006, use with Combitip reservoir tips.	1
<b>Pump</b>	
Pump, aeration, aquarium air pump, assorted, with various sizes of air diffusing stones.	20
Pump, peristaltic, Masterflex C/L (motor, controller and head are one unit), variable speed, analog, 1 to 6 rpm, reversible, dual-channel pump head, 0.002 to 1.3 mL/min per channel, accepts eight Microbore Autoanalysis Tubing sizes. Tubing size (ID) and flow rate (mL/min) at 6 rpm: 0.008"=0.01, 0.010"=0.02, 0.020"=0.07, 0.035"=0.21, 0.045"=0.34, 0.056"=0.50, 0.081"=0.88, 0.110"=1.3. Comes with 0.1099" ID x 0.1779" OD Tygon tubing, formulation R3603, Cole Parmer 95609-48. Masterflex 77120-52.	1

Pump, peristaltic, Masterflex L/S drive (motor and controller are one unit; request head below), variable speed, digital, 0.02 to 100 rpm, reversible, dispense by volume or time, accepts 4 pump heads, Masterflex 07522-30. Note that flow rate depends on drive rpm, pump head and tubing size.	1
Peristaltic Pump Head, Masterflex L/S Easyload II, for High-Performance Precision pump tubing, w/ adjustable occlusion, fits the following tubing sizes (flow rates in mL/min with 100 rpm drive): L/S 15: 0.033-170, L/S 24: 0.057-280, L/S 35: 0.077-380, L/S 36: 0.096-480, Masterflex 77201-62. Request L/S 24 PharMed BPT, opaque, autoclavable tubing in the Consumables and Supplies section: "Tubing"- "Masterflex"- "1/4" ID (size 24) for Masterflex L/S peristaltic pumps", Cole Parmer 06508-24.	4
Pump, vacuum, oil-less, diaphragm, max pressure 60 psi, max vacuum 25.5" Hg, w/ gauges, Gast DOA-P104-AA, GAST DOA-P704-AA. Request 3/8" ID tubing in the Consumables and Supplies section: "Tubing" - "Rubber, Vacuum" - "3/8" ID, 7/8" OD, 1/4" wall, black", Cole-Parmer 96143-08.	9
Pump, vacuum, hand-operated, 15 cc/stroke, w/ gauge, attains and holds vacuum of 25" Hg, fits 1/4" ID tubing (some tubing is supplied), Nalgene 6132-0010.	2
<b>Refractometer</b>	
Refractometer, salinity, handheld, temperature compensated, 0-100 ppt, VWR 12777-992, Sper Scientific 300011.	2
<b>Regulators</b>	
CGA 320 for Carbon Dioxide, double stage.	3
CGA 540 for Oxygen, double stage.	6
CGA 350 for hydrogen, double stage.	1
CGA 580 for inert gases, nitrogen, helium, double stage.	11
CGA 590 for industrial air, double stage.	9
<b>Salinometer</b>	
Salinometer, w/ tubing, stoppers, laptop and software, and other necessary items. Measurement range 0.004 to 76 mS/cm, 0.0001:1.15 conductivity ratio; accuracy +/- 0.003 equivalent PSU; resolution 0.0003 mS/cm @ 15 °C and 35 PSU, 0.0003 equivalent PSU. Guildline Instruments, Portasal, 8410A.	2
External Sample Pump, peristaltic, w/ tubing, Guildline Instruments, 84105.	2
Sample Bottles, 250 mL, square, glass, w/ caps and inserts.	190
<b>Sealer</b>	
Sealer, pouch/bag, multi-purpose, 10", Kapak Corp, 9062.	1
<b>Shaker</b>	
Shaker, orbital, 4 mm orbit, digital, 80 to 800 rpm, timer 1 - 599 min or continuous, 10" x 12" platform, IKA KS 130 Control.	3
Platform, wooden.	1
Shaker, orbital, 19 mm orbit, digital, 15 to 500 rpm, timer 1 sec - 160 hrs, 13" x 11" platform, VWR 3500 Advanced, 89032-096.	1
Platform, 13" x 11", universal, stainless steel, VWR 89027-702.	1

Platform, 13" x 13", w/ holders for 12 x 250 mL flasks, VWR 97003-618.	1
Platform, 13" x 13", w/ holders for 16 x 125 mL flasks, VWR 97003-616.	1
<b>Sieve</b>	
Sieve, 12" diameter, 1 mm mesh, No. 18, stainless steel.	1
Sieve, 12" diameter, 4 mm mesh, No. 5, stainless steel.	1
Sieve, 8" diameter, 1 mm mesh, No. 18, stainless steel.	1
Sieve, 8" diameter, 500 µm mesh, No. 35, stainless steel.	1
Sieve, 8" diameter, 8.0 mm (5/16") mesh, stainless steel.	1
<b>Spectrophotometer</b>	
Spectrophotometer, Lambda 365+, UV/VIS, dual-beam optics, spectral bandwidth capability 0.5 to 20 nm, wavelength range 190 to 1100 nm, w/ computer, Perkin Elmer N4100022.	1
Cell changer, 8-position, water-jacketed (requires external bath for sample temperature control), for 10 mm pathlength cells, Perkin Elmer N4101006.	1
Cell, 10 mm pathlength, UV Quartz Suprasil, 3.5 mL, PTFE lid, Perkin Elmer B0631009.	1
Cell, 10 mm pathlength, UV Quartz Suprasil, 3.5 mL, PTFE stopper, Perkin Elmer B0631027.	1
Integrating Sphere, high sensitivity 50 mm transmission-reflectance accessory, spectral range 230~1100 nm (UV and visible), for measuring diffuse reflectance (specular component included – SCI), total transmittance or hemispherical transmittance, and performing color analysis. Recommended for solid color analysis. Perkin Elmer N4100219.	1
Integrating Sphere, powder cell holder kit, for reflectance measurement of paste and powder samples. Includes a powder cell, two quartz windows for trapping light, and two quartz caps for the white standard. Perkin Elmer N4101049.	1
Integrating Sphere, standard, white.	1
Spectrophotometer, USB UV/VIS absorbance spectrophotometer system (USB2000 Spectrometer with USB-ISS-UV/VIS light source and integrated 1 cm cuvette holder), 200-1100 nm, w/ laptop, Ocean Optics ChemUSB2-UV/VIS.	2
Cell Holder, single, adjustable 10-100 mm pathlength, accommodates filters up to 2 mm thickness, Ocean Optics CUV-VAR, no temperature control.	2
Cell Holder, single, cylindrical, 100 mm pathlength, temp controlled with additional water bath.	2
Cell Holder, single, square, 10 mm pathlength, filter slot accommodates filters up to 1/4" thickness, Ocean Optics CUV-UV, temp controlled with additional water bath requested separately.	2
Cell, 10 mm pathlength, Spectrosil Far UV quartz windows, 170 to 2700 nm, 1.4 mL volume, semi-micro, black masked, PTFE stopper, Starna Cells 29B-Q-10.	2
Cell, cylindrical long pathlength, 100 mm pathlength, Spectrosil quartz or equivalent windows, 170 to 2700 nm, 28.2 mL volume, PTFE stoppers (2 ea), Starna Cells 34-Q-100.	1
Cell, flow-through, 10 mm light path, Quartzglass Suprasil, 0.08 mL volume, Hellma Analytics 178.710.QS.	1
Cell, flow-through, 10 mm pathlength, Spectrosil Far UV quartz windows, 170 to 2700 nm, 0.420 mL volume, wide aperture, short window, black masked, Starna 583.65.65-Q-10/Z15.	2
Cell, rectangular, 100 mm pathlength, quartz, Far UV, 170 to 2200 nm, 7.0 mL volume, open top, PTFE lid, Spectrocell ML-3100.	2
Polystyrene Calibration Film, International Crystal Laboratories 0009-7676.	1

<b>Thermometer</b>	
Thermometer, analog, blue spirit, -10 °C to +50 °C, 0.5 °C division, 76 mm immersion.	1
Thermometer, analog, blue spirit, -35 °C to +50 °C, 1 °C division, 76 mm immersion.	1
Thermometer, analog, blue spirit, -1 °C to +51 °C, 0.2 °C division, 76mm immersion.	1
Thermometer, analog, blue spirit, -20 °C to +110 °C, 1 °C division, 76mm immersion.	1
Thermometer, analog, blue spirit, -20 °C to +110 °C, 1 °C division, 76 mm immersion.	1
Thermometer, analog, blue spirit, -10 °C to +150 °C, 1 °C division, total immersion.	2
Thermometer, analog, red spirit, -30 °F to +120 °F, 2 °F division	1
Thermometer, digital, K, waterproof, -200 °C to +1300 °C, 0.1 °C resolution, accuracy +/-0.3 °C, measures in both °C and °F, type K thermocouple, traceable to NIST Standards, Fisherbrand Traceable 15-078-186. Accepts all type K thermocouple probes.	3
<b>Timer</b>	
Timer, digital, 1 channel, 10 hour, 1 second resolution, 0.01% accuracy, traceable to NIST Standards, Fisherbrand Traceable 06-662-50.	3
Timer, plug in, for 120V AC outlet, 15 amp, Intermatic Time All.	2
<b>Vortex</b>	
Vortex, various models. Scientific Industries, Genie 1, SI-0136, single speed; VWR, Analog Vortex Mixer, 10153-838, variable speed.	2
<b>LABORATORY AND SCIENCE VANS AND WALK-IN COOLERS</b>	
<b>Freezer Van</b>	
Freezer Van #6. Temperature controlled lab van for temperatures between -25 °C and +4 °C.	1
<b>Trace Metal Clean Van</b>	
Light Incubation Van #14. Contains installed suite of light banks (400 lumens, light color 18, blue) with shelving. Temperature controlled for temperatures between -25 °C and +4 °C.	1
<b>Radioisotope Van</b>	
Rad Van #2. Designed for research involving radioisotopes.	1
Rad Van #4. Designed for research involving radioisotopes.	1
<b>Trace Metal Clean Van</b>	
Trace Metal Clean Van #7. Contains a garage section for the deployment of a Trace Metal Clean rosette and a lab section for sample processing.	1