

Major Chemistry Department Instrumentation					
<i>Updated May 2019</i>					
Instrument	Number	Make	Model	Year of Acquisition	Location
Aerogel Fabrication Characterization and Application Laboratory					
Critical Point Dryer w/water circulator and heater/chiller	2	Energy Beam Sciences	E3100	2008	Wold 115
Gas Pycnometer	1	Micromeritics	AccuPyc 1330	2005	Wold 115
GC-MS (electron impact)	1	Hewlett-Packard	5890	1990	Wold 115
High Speed Camera Contact Angle Measuring System	1	Kruss	DSA100	2009	Wold 115
Hydraulic Hot Press, programmable	1	Tetrahedron Associates	MTP-20	2014	Wold 115
Hydraulic Press System, 24 ton, 14" x 14"	1	Tetrahedron Associates	MTP-14	2008	Wold 115
Material Testing Workstation	1	MTS	Insight 5	2008	Wold 115
Physisorption Analyzer, automatic	1	Micromeritics	ASAP 2020	2015	Wold 115
Physisorption Analyzer, automatic	1	Micromeritics	TriStar 3000	2008	Wold 115
Smart Prep Preparation Station for degassing samples	1	Micromeritics	SmartPrep	2008	Wold 115
Thermal Constants Analyzer	1	Hot Disk	HD-01	2003	
Biochemistry					
Centrifuge	1	Eppendorf	5702R	2016	Wold 207
Centrifuge (vacuum) Concentrator	1	Eppendorf	Vacufuge Plus	2002	Wold 201
Coldroom (4°C, 9 ft x 8 ft)	1	Thermax		2011	Wold 203
Fast Protein Liquid Chromatography (FLPC) System	1	Bio-Rad	NGC 10 QUEST	2014	Wold 209
Fraction Collectors	6	Bio-Rad	2110	2016	Wold 207
Freezer (-80°C)	1	Fisher	Isotemp	2012	Wold 210
Gel Imaging System	1	Syngene	Gbox	2008	Wold 207
Incubator	1	Fisher	Isotemp 5153	2011	Wold 204
Laminar Flow Hood	1	Labconco	Horizontal Clean Bench	2011	Wold 204
Lyophilizer	1	Labconco	4.5 L Freeze Drier	2014	ISEC 278
PCR	1	Bio-Rad	iCycler	2004	Wold 201
PCR Cabinet	1	Labconco	Purifier	2011	Wold 207
Protein Electrophoresis Cells	5	Bio-Rad		2001	Wold 201
Shaker/Incubator (4 - 50 °C)	1	ThermoScientific	MaxQ 4000	2015	Wold 204
Water Polishing System	1	Elga	PureLab Ultra	2011	Wold 207
Western Blot Transfer Cell	1	Bio-Rad		2012	Wold 209
qPCR	1	Applied Biosciences	QuantStudio3	2020	Wold 210
Cell Culture					
Biological Laminar Flow Hood (Class II, type A2, 4 ft)	1	ThermoScientific	1300 series	2011	
Cell Counter, automated	1	Invitrogen	Countess	2011	
Cell Counter, automated	1	Millipore	Scepter	2012	
Centrifuge (benchtop, refrigerated, with multiple rotors)	1	Sorvall	Legend ST16	2011	Wold 208
CO ₂ Incubator (water-jacketed, for mammalian cells)	1	Fisher	Isotemp	2011	
Light Microscope, inverted	1	Nikon	TMS	2011	
Light Microscope, compound	1	Nikon	Alphaphot YS-2T	2011	
Micro-osmometer, freezing-point depression	1	Advanced Instruments	Model 3300	used (1999) but purchased in 2012	Wold 208
Chromatography, Separations, Mass Spectrometry					
GC-FID	2	Agilent	7890B	2015	Olin 205
GC-MS with autosampler (chemical ionization and electron impact), NIST 2014 M data base	1	Agilent	6890N/5973N	2003, software upgrade in 2016	ISEC 278
HPLC, quaternary gradient HPLC with diode array UV/Vis detector, fluorescence detector, refractive index detector, and autosampler. Capable of both analytical and semi-prep scale purifications. ChromSword software available.	1	Agilent	1100	2003	ISEC 278
ICP-MS with laser ablation unit (<i>access to instrument in the Geology Department</i>)	1	Agilent	8900	2017	Olin 331
LC-MS/MS, binary gradient HPLC with variable wavelength UV/Vis detector and autosampler; triple quadrupole mass spectrometer with ESI and APCI sources	1	Agilent	1200 series HPLC; 6410B MS	2009	Olin 005
Preparatory-Scale HPLC with UV/Vis Diode Array Detector and Fraction Collector	1	Shimadzu	LC-10	used (~2000) refurbished in 2014	ISEC 278
Ion Chromatograph (<i>access to instrument in the Geology Department</i>)	1	Dionex	DX-500	1997	Olin 331
Ion Chromatograph (<i>access to instrument in the Geology Department</i>)	1	Dionex	ICS-2100	2010	Olin 331
GC-MS with autosampler (chemical ionization and electron impact), NIST 2017 Li	1	Agilent	8860	2020	TBA
Computational Chemistry					
Access to high performance computing on the Hamilton College Cluster (http://academics.hamilton.edu/chemistry/computational)					
Electrochemistry					
Voltammetric Analyzer	1	PAR	VersaSTAT3	2009	ISEC 270
Inorganic and Solid State Chemistry					
Box Furnace	1	Carbolite	CWF 11/13	1998	
Convection Oven	1	Carbolite	PF120	1998	
Magnetic Susceptibility Balance	1	Johnson-Matthey	MSB-Auto	2001	
Magnetic Susceptibility Balance	1	Sherwood Scientific	MSB-Auto		
Tube Furnace	1	Carbolite	HST 12/50/400	1998	
Physical Chemistry					
Argon-Krypton Mixed Gas Ion Laser	1	Coherent Inc	Innova 70C Spectrum	2015	Olin 005C

Bomb Calorimeter	1	Parr Instrument Company	6200EA	2014	ISEC 270
Monochromator/CCD Detector	1	Andor	SR303	2014	Olin 005C
Polarimeter	1	Rudolph	Autopol III	2016	ISEC 270
Spectroscopy					
Atomic Absorption Spectrometer	1	Perkin-Elmer	3100	1992	ISEC 270
Fluorometer	1	Photon Technology	QuantaMaster	1998	ISEC 270
Fluorometer with phosphorescence system and nitrogen-pumped dye laser for time-resolved measurements	1	PTI	TimeMaster C-700	2003, 2005	ISEC 270
FTIR	1	Thermolectron	IR 200	2007	ISEC 270
FTIR	1	Thermolectron	iS5	2015	Olin 205
FTIR w/ Diamond Anvil ATR	1	Thermolectron	iS5, iD7 (ATR)	2016	ISEC 278
NMR (400 MHz, with variable temperature, broadband and inverse multinuclear probes)	1	Bruker	Avance III	2010	ISEC 278
Raman Spectrometer	1	DeltaNu	Advantage 633	2009	ISEC 270
UV/Vis Diode-Array Spectrophotometer with kinetics software	3	Agilent	8453	2010	ISEC 270
UV/Vis Diode-Array Spectrophotometer with kinetics software	2	Agilent	8454	2015	ISEC 270, Olin 205
UV/Vis Microplate Reader	1	Molecular Devices	SpectraMax 190	2009	Wold 210
UV/Vis/Fluorescence Microplate Reader	1	Molecular Devices	SpectraMax M5	2010	Wold 210
UV/Vis/Fluorescence Microplate Reader	1	Molecular Devices	SpectraMax iD3	2017	Wold 210
UV/VIS/NIR dual monochromator spectrophotometer	1	Perkin-Elmer	Lambda 900	2003	ISEC 270
Surface Science					
Atomic Force Microscope (w/ inverted optical microscope)	1	Asylum	MFP-3D-SA	2009	Olin 005
Infrared Microscope	1	Bruker	Tensor	2009	Olin 005
Raman Microscope	1	Bruker	Senterra	2009	Olin 005
Scanning Electron Microscope with EDX	1	Zeiss (EDX is Bruker)	EVO	2015	Olin 005
Other Specialized Equipment					
Differential Scanning Calorimeter	1	Perkin-Elmer	DSC-7	1989, upgraded 2000	
Glove Box with freezer	1	MBraun	UNILab	2002	ISEC 278
Microwave Synthesizer	1	Milestone	Start Synth	2013	ISEC 278
Solar Simulator	1	Atlas Materials Testing	Suntest XLS+	2006	
Thermogravimetric Analyzer	1	Perkin-Elmer	TGA-7	1989, upgraded 2000	