

## EQUIPMENT

### For IBB Faculty -- Lab Major Equipment

#### Petit Institute for Bioengineering and Bioscience Core Facilities (by Building)

##### Cores in the Petit Biotechnology Building

###### **Microscopy Core**

Zeiss LSM 780/ ELYRA super resolution microscope system  
Zeiss LSM 710 NLO multi-photon confocal microscope system  
Zeiss LSM 700 confocal microscope system  
Zeiss LSM 900 w/ Airy Scan confocal microscope systems (2)  
Zeiss PALM Microbeam laser capture micro-dissection system  
Molecular Devices ImageXpress PICO high content imaging system  
Zeiss AxioObserver Z1 Fluorescence microscope  
Biotek Cytation 7 Reader/Imager w/ BioSpa 8 Robotic incubator, plate handler, and washer

###### **Biomechanics Core**

MTS MiniBionix 858 uniaxial servohydraulic material testing system (axial/ torsion)  
Bose / TA Instruments ElectroForce 3200 Axial Extended Stroke (high displacement) configuration  
Bose / TA Instruments ElectroForce 3200 Axial/Torsion configuration  
Bose / TA Instruments ElectroForce 3100 uniaxial material testing system (small displacement/load)  
Anton Parr MCR302 Rheometer

###### **MicroCT Core**

Scanco Medical micro CT 40 tissue scanner  
Scanco Medical micro CT 50 high resolution tissue scanner  
Scanco Medical viva CT 40 small animal scanner  
Siemens Inveon CT scanner

###### **High Throughput DNA Sequencing Core**

Illumina NovaSeq 6000 High throughput DNA sequencing system

###### **Magnetic Resonance Imaging Core**

Bruker PharmaScan 7T MRI Scanner

###### **Histology Core**

Leica Autostainer automatic stainer  
Buehler Isomet 1000 precision saw  
Buehler Ecomet 3 grinder  
TEC2120 tissue embedding system  
RTPH-360 enclosed tissue processor  
Leica S6D stereomicroscope  
Leica CM3050S cryostat  
Thermo Scientific Cryostar NX-70 Cryostat  
Waldorf (Germany) HM355S Microm rotary microtome (2)  
EXAKT Grinding System  
Zeiss 100M fluorescence microscope w/camera

###### **Biomolecular Analysis Core**

Beckman Coulter Analytical HPLC  
LiCor Biosciences Odyssey CLX infrared imager  
Agilent Bioanalyzer DNA, RNA and Protein Analysis  
Labconco Centivap Concentrator/Cold Trap speed vac system (2)

Labconco FreeZone 6 Freeze Drying System (2)  
Perkin-Elmer Tri-Carb 2900TR scintillation counter  
Amxa Nucleofector cell electroporator  
Perkin Elmer IVIS Spectrum CT in vivo imaging system  
Applied Biosystems Step One Plus sequence detector  
Beckman Coulter 22R refrigerated Micro centrifuge  
Beckman Allegra R15 benchtop centrifuge  
Packard Cobra II auto-gamma counter,  
Beckman Coulter XPN 100 ultracentrifuge  
Avanti J1-30I high speed centrifuge  
Fast Prep Tissue Homogenizer  
Biotek Synergy H4 multi-mode plate reader (2)  
GE FLA 9500 Imager  
GE AI 600 RGB Imager

### **Cellular Analysis and Cytometry Core**

Amnis Imagestream X imaging flow cytometer  
Fluidigm Helios Platform Mass cytometer and Hyperion imaging mass cytometer  
BD FACS Aria IIIu flow cytometer/cell sorter  
BD Melody Cell sorter w/ VBR lasers  
Beckman Coulter CytoFLEX S flow cytometer w/ plate loader (2)  
Cytek Bio Aurora full spectrum cytometer w/ plate loader  
IZON Exoid Tunable Resistive Pulse Sensing (TRPS) instrument  
Beckman Coulter Multisizer 4e cell counter  
BD Accuri C6  
BD Accuri C6 Plus w/ plate loader  
Countess Cell Counter

### **Systems Mass Spectrometry Core**

Agilent 7890B GC/5977A MSD  
Bruker Amazon Speed Ion Trap with ETD  
Bruker RapiFlex MALDI TOF  
Sciex QTrap 4000  
ISQ 7610 GC/MS Instrument  
Thermo Exploris 240 LC/MS system

## **Cores in the Engineered Biosystems Building**

### **Microscopy Core**

Perkin Elmer Spinning Disk System  
Zeiss Z1 Dual Illumination Light Sheet Fluorescence Microscope System  
Nikon CSU-W1 Spinning Disk Confocal System  
Bruker Opterra II Swept Field Microscope System  
Bruker Vutara 352 Super Resolution Microscope System  
Bruker Investigator Upright Multi-photon excitation System

### **Cellular Analysis and Cytometry Core**

BD FACS Aria Fusion  
BD LSR Fortessa  
BD Accuri C6  
BD Melody Cell sorter w/ BYGR lasers  
Isoplexis IsoLight single cell proteomics analyzer  
Axion Biosystems Maestro Pro multi-well microelectrode array (MEA) and impedance system  
GE Biosciences Typhoon Trio + variable mode imager and eraser

### **Systems Mass Spectrometry Core**

Vanquish Horizon LC / Thermo Scientific Orbitrap ID-X MS  
Vanquish Horizon LC / Thermo Scientific Q Exactive HF MS  
Dionex UltiMate 3000 RSLCnano UHPLC system / Thermo Scientific Q Exactive Plus MS  
Dionex UltiMate 3000 RSLC UHPLC system  
Waters Acquity I Class LC  
Proteome Discoverer Software (ver. 2.1)  
Matrix Science Mascot Server (ver. 2.5.1)  
Thermo Scientific Compound Discoverer  
Thermo Scientific Sieve Software (ver. 2.2sp2)  
Beckman PF-2D Chromatography system

### **Genome Analysis Core**

Fluidigm BioMark qRT-PCR  
Bio Rad QX200 ddPCR  
Lonza 4D Nucleofector Core Unit  
10X Genomics Chromium System  
BioRad ddSEQ single cell isolator  
Bionano Genomics Saphyr genome imaging system

### **Biopolymer Characterization**

BioTek Synergy H4 Microplate Readers  
AP Chirascan™-plus CD Spectrometer  
Olis RSM1000 Stopped-Flow Spectrophotometer  
Shimadzu NEXERA with RI, Fluorescence and PDA detector  
Wyatt DynaPro NanoStar Dynamic Light Scattering  
GE AKTAPure 25M with refrigerator  
GE Ultrospec 2100 pro UV-Vis Spectrometer  
OmniSEC REVEAL  
OmniSEC  
Malvern Zeta-sizer (zeta potential measurement)  
Beckman XPN ultracentrifuge  
Beckman Avanti centrifuge  
Wyatt Dynapro plate reader (DLS with HTS capacity)  
Prometheus nanoDSF (native differential scanning fluorimeter) Nanotemper technologies  
MicroCal VP-DSC 2M (Differential scanning calorimeter)  
MicroCal iTC200 (Isothermal calorimetry)  
Beckman Optima AUC + Schlieren optics (analytical ultracentrifugation)

### **Molecular Evolution (General)**

Biacore T-2000 Surface Plasmon Resonance System  
Typhoon Trio Plus Imager  
Thermal cycler  
Electrophoresis  
New Brunswick Scientific Innova 44 Shaker  
NuAire NU 475-500  
Illumina NovaSEQ 6000 system  
Illumina MiSeq system  
Illumina iSEQ system  
Grenova Tip Washer  
BIOSETT DNA synthesizer  
Qiagen Qiacube  
Echo liquid handling system  
Crocodile ELISA Robot  
Qpix 2XT Colony picker  
Andrew Robot Liquid Handling System  
Stratagene Mx3005P qPCR System

DXS Automated ELISA System  
Taspestri Single cell Multi-omics system

**Molecular Evolution (CLIA Lab)**

BSC LYSIS Hood

Traceable® Ultra-Low Temperature WIFI Data Logger with TraceableLIVE® Cloud Service

Pipette Communication Module

Assist PLUS Base Unit

CLARIOstar PLUS Plate Reader

California Air Compressor

KingFisher 3

KingFisher 4

Bead Disrupter A

Bead Disruptor B

Bead Disruptor CLIA