

# FY15 HSC Cores Equipment

## Cell Imaging

- Two Olympus FV1000 Confocal Microscopes
- Nikon A1 Confocal Microscope
- Nikon A1R Confocal Microscope
- Prairie Multi-Photon Confocal Microscope
- Zeiss Axioscan Z1 automated slide scanner with 100 slide loader
- Nikon Widefield/Spinning Disk Confocal Microscope
- EVOS FL Widefield Microscope
- Nikon Ti Automated Microscope
- SPIM light sheet microscope

## CZAR

- M205 FA Leica Microscope
- Zeiss Microscope
- Olympus Microscope
- 7 microinjection stations with bright field stereomicroscopes
- Analog camera and monitor to facilitate teaching microinjection in real time

## DNA Peptide

- ABI 3900 DNA Synthesizer (2)
- ABI 394 DNA Synthesizer (3)
- ABI 433 Peptide Synthesizer
- ABI 433 Peptide Synthesizer
- Beckman Coulter System Gold 125P HPLC System
- Beckman Coulter System Gold 126 HPLC System
- Hewlett Packard Series 1100 HPLC system (2)
- Beckman Coulter DU800 Spectrophotometer
- BioTek Epoch Plate Reader Spectrophotometer

## DNA Sequencing

### Sequencers

- Ion Torrent PGM
- Ion Torrent Proton
- Qiagen Q24 Pyrosequencer
- Applied Biosystems 3730xl

### Liquid Handlers

- 2 Biomek FX's

## Drug Discovery

### Automated Liquid Handling Stations:

- Tecan EVO100/MCA96 Liquid Handler with sterile bio-hoods
- Tecan EVO100/MCA384 Liquid Handler with sterile bio-hoods
- CyBio(Matrix) 96/384 Liquid Handler
- Matrix PlateMate Plus 384 Liquid Handler
- HP D300 Digital Dispenser
- Bio-tek Plate Washer with stacker

### Automated Detection Systems:

- Molecular Devices ImageXpress XLS Automated High-Content System
- Bio-tek Plate Synergy 4 Plate Reader with stacker

### CRISPR Libraries:

- The genome-scale CRISPR-Cas9 knockout (GeCKO) v2 library
- Subset CRISPR libraries: a) human Lentiviral sgRNA library-kinases, and b) human Lentiviral sgRNA library-nuclear proteins

### Commercial Compound Libraries:

- Chembridge Diverset EXP(50K) and CL (50K)
- Microsource Spectrum Collection
- NIH Clinical Collection
- Epigenetics Screening Library
- Kinase Inhibitor Library
- NCI Diversity Set IV
- Natural Products Set II

### Private/Proprietary Chemical Collections:

- UUPCC – University of Utah Private Chemical Collection
- Dept of Chemistry Library
- Ireland Natural Product Collection

## Electron Microscopy

- FEI Tecnai 12, transmission electron microscope
- JEOL JEM-1400 Plus, transmission electron microscope
- Two Hitachi 7100, transmission electron microscopes
- FEI Tecnai F20, transmission electron microscope
- Leica (UC7, UC6, and UCT) and Reichert (Ultracut E), ultramicrotomes
- Leica JUNG RM2055, microtome
- Two FEI Vitroblots, vitrification robots
- Gatan K2 Summit, direct electron detector (with FEI Tecnai F20)
- Two automatic tissue processors
- Two Laboratory microwave ovens
- Sputter coater
- Glow discharger
- High-pressure freezer
- Freeze substitution machine
- Critical-point dryer

## Flow Cytometry

### Sorters

- BD FACSAria
- Propel Labs Avalon

### Analyzers

- BD FACSCanto
- Cytex DXP
- BD FACScan

## Genomics

- One AB 7900HT systems
- Illumina iScan
- Quantstudio 12k Flex Real-Time PCR System

## Machine Shop

- CNC Mills
- Traditional Mills
- Manual Lathes and CNC Lathe
- Grinders
- MIG, TIG, Gas, Arc, and Spot welders
- Wood Working Equipment
- Band & Table Saws
- Sharpening Equipment
- Polishing Equipment

## Mass Spectrometry & Proteomics

### Mass Spectrometers

- Thermo LTQ-FT
- Bruker UltrafleXtreme
- Waters Q-ToF-2
- **NEW!** Bruker Maxis HD for high mass accuracy intact protein analysis.

### HPLC Systems

- Two Eksigent 1D nanoLC systems
- One Eksigent 2D-Ultra system
- One Shimadzu 10AD system
- One Leica CM1950 cryostat system

## Metabolic Phenotyping

- Seahorse Flux (XF24) Analyzer
- Eight Columbus Instruments metabolic chambers equipped with temperature-controlled enclosure.
- NMR
- Luminex MAGPIX & Luminex 200 System

## Metabolomics

### Chemical Analysis Platforms:

- Waters GCT Premier gas chromatograph-mass spectrometer (GC-MS)
- Agilent 5973 gas chromatograph-quadrupole mass spectrometer (GC-MS)
- Agilent 6520 Ultrapressure liquid chromatograph-quadrupole time of flight mass-spectrometer (UPLC-QTOF-MS)
- Agilent 6550 Ultrapressure liquid chromatograph-quadrupole time of flight mass-spectrometer (UPLC-QTOF-MS)
- Agilent 6550 QTOF, which is a highly sensitive and state of the art mass spectrometer for polar metabolite analysis
- Varian 500 MHz NMR with data processed by the Chenomx software suite

## **Mutation Generation & Detection**

- BioFire LightScanner
- 3X Eppendorf Mastercycler ProS
- Eppendorf Centrifuge 5430
- 27" Apple iMac Desktop with QWC Mercury Elite-AI Pro External Hard drive
- Illumina Eco
- Innova 43 bacterial Shaker
- Innova 42 bacterial Shaker
- Frigidaire -20°C Freezer
- 2X Eppendorf 5424 Microcentrifuges

## **Nuclear Magnetic Resonance (NMR)**

- Varian Mercury 400 MHz NMR (University of Utah, SK H)
- Varian Inova 500 MHz NMR (University of Utah, BPRB)
- Varian Inova 600 MHz NMR with HCN cryogenic probe (University of Utah, BPRB)
- DD2 800 MHz NMR with HCN cryogenic probe (University of Colorado-Boulder)
- DD2 900 MHz NMR with HCN cryogenic probe (University of Colorado-Denver)

## **Small Animal Imaging**

- 7 Tesla Bruker BioSpec MRI Scanner
- Inveon Multimodality System
- VISEN (now Perkin Elmer) FMT 2500™ Fluorescence Molecular Tomography

## **Small Animal Ultrasound**

- Two VisualSonics 2100 ultrasound machines
- Off-line image analysis station and network storage for backing-up data files

## ***Service Recharge Centers***

### **Nuclear Engineering**

Radiation Detectors:

- Canberra Alpha Analyst
- Canberra HPGe detectors
  - BEGe 3830
  - REGe 4020
  - GC 4020
- Beckman Liquid Scintillation Counter
- TRIGA Research Reactor