

## **FACILITIES AVAILABLE AT THE TRL**

### **PRIMARY TRL FACILITY**

The UIC-TRL maintains its 7 offices and primary laboratory space in the UIC Benjamin Goldberg Research Center. The GLP dosage formulation laboratory occupies 200 square feet and is secured from all unauthorized access. The general laboratories located in two rooms comprise a total of 1028 square feet. As subsequently discussed, the UIC centralized animal facility (which also contains the clinical pathology laboratory and necropsy suite), the analytical chemistry laboratory (UIC Drug Disposition Research Laboratory), and the pathology laboratories (on-site Pathology Associates, Intl. facilities) all support the UIC-TRL GLP programs.

TRL's genomic and proteomic research is supported by the UIC Genomic core facility and Protein Research Laboratory. TRL is located in the middle of the "Illinois Medical District", surrounded by four major hospitals. This gives TRL a unique opportunity to continue preclinical safety studies in clinical trials. By offering the resources of a major State University and UIC Hospital with wide experience of staff, professors, and other leading medical specialists, TRL can propose an endless variety of disease models and conduct preclinical studies seamlessly followed by clinical trials to evaluate potential drugs for their cure. General Clinical Research Center supports all clinical trials at UIC.

All test materials under study are stored in the GLP dosage formulation laboratory in accordance with the conditions listed on the Test/Control Article Fact Sheet for that material. Those chemicals that are to be maintained at standard conditions are kept in a locked storage cabinet in this room. Temperature records are kept for refrigerators and freezers which are used to store temperature sensitive test articles. Records are also maintained on all refrigerators, freezers, and balances used by the UIC-TRL.

The GLP dosage formulation laboratory is used to prepare all solutions and suspensions for use in GLP studies. Two Omni® mixers (homogenizers) are available for this purpose. Filling of capsules for administration to dogs is also performed in this laboratory facility. The following equipment are contained in this laboratory:

- 1 Revco Upright Freezer (-80<sup>0</sup>C)
- 1 Refrigerator/Freezer
- 2 Omni Mixers
- 6 Stir plates
- 1 Blender
- 1 Branson Sonicator
- 1 Mettler AG245 Balance
- 1 Mettler AM100 Balance

One room of the UIC-TRL research laboratories comprises 422 square feet and primarily supports tissue culture, molecular biology and HPLC studies. The following equipments are located in this laboratory.

Frigidaire refrigerator with freezer  
Revco Ultra-low temperature freezer  
3M Attest incubator  
Sorvall Omnimixer  
Mettler analytical balance  
ICN Laminar flow hood  
Baker Class II, Type A Biological safety cabinet  
Harris CO2 incubator  
Cambridge inverted microscope  
Reichert-Jung standard microscope  
Waters HPLC pump with UK variable injector  
Waters LC Module I Integrated HPLC System  
Barnstead Mega-Pure® 3A Water Still and Automatic Deionizer  
Pump: 600E Powerline™ Controller  
Autoinjector: 715 Ultra Wisp™  
UV Detector: 486 Tunable Absorbance Detector  
Millennium 2010 Chromatography Manager  
Varian-Gas Chromatograph (Model 3700)  
IEC-Centra-GP8R High Performance refrigerated centrifuge  
IEC refrigerated centrifuge

The other Room comprises 606 square feet and is a general biochemistry laboratory for the support of toxicology research programs. The following equipment are located in this laboratory.

Spec-20D spectrophotometer  
Mettler top loading balance  
Markson pH meter  
Frigidaire refrigerator  
Sorvall refrigerated superspeed centrifuge  
Sorvall refrigerated ultracentrifuge  
IEC centrifuge  
Waring blender  
National water bath  
Thelco oven  
Hitachi split beam spectrophotometer  
Thermolyne stirring hot plate  
ICN laminar flow hood  
Cornelius ice maker  
Brinkmann microcentrifuge  
Precision circulating water bath  
Taskmaster magnifier lamp  
Hofer electrophoresis equipment:  
Power supply 250V, 2.5A  
Multiple gel caster  
Dual gel caster  
Dual cooled vertical slab unit

Gel electrophoresis unit  
Tank transfer unit

## **DATA COLLECTION AND ANALYSIS**

The operations of UIC-TRL are based on several dedicated computers, each best suited for a range of applications. This results in the analysis of data in the most timely and cost efficient manner possible. These machines have access to a mainframe system for computation of extremely large databases. The commercially available LABCAT on line data collection system utilizing PCs is used to collect clinical signs/observations, body weight, food consumption, clinical chemistry, hematology and organ weight data directly on-line. These data are uploaded to a hard disk at the end of the data collection procedure. At that time, a hard copy is also printed which is signed and dated by the appropriate personnel and then placed in the study notebook. All data are secured daily and archived by Quality Assurance personnel at the conclusion of the study. The LABCAT data collection program includes built-in statistical analysis capabilities, with the generation of report quality summary and individual animal data tables. Additional computer software programs used by the Toxicology Research Laboratory include Lotus versions 2/3/4, WordPerfect 8.0, Graphwriter, Sci Mate, Systat, Sygraph, PCNONLIN, Freelance Plus, Borland C++, SlideWrite Plus 2.0 for Windows, Harvard Graphics 98 for Windows and specially designed statistical analyses programs. SAS, SPSS and BMDP statistical analyses programs are also available on the University's mainframe computer system.

## **ADDITIONAL DEPARTMENT RESOURCES**

As part of the UIC Department of Pharmacology, the UIC-TRL has the use of the department's instrumentation room located on the fourth floor in the Medical Sciences Building. The room is approximately two blocks from UIC-TRL. The room (235 sq. ft.) contains the following equipment which is communal to members of the Department.

2 Beckman LS3801 liquid scintillation counters  
LKB 1272 CliniGamma counter  
Beckman L8-M ultracentrifuge  
JEC PR-7000 large capacity refrigerated centrifuge  
LabConco freeze dry system  
Market Forge Steri-matic Autoclave

## **ANIMAL FACILITY**

The AAALAC Intl. accredited animal facility oversees the procurement, care and maintenance of animals used at the University of Illinois at Chicago. This facility has supported the GLP toxicology activities of the UIC-TRL for 18 years. The animal facility is under two levels of security. First, a key card is required for entrance to the facility. Secondly, every animal room is under lock and key. The animal facility is

redundantly wired to two separate Commonwealth Edison power stations. In addition, the animal facility is tied into the University emergency generator.

Responsibilities of animal facility management (which includes four ACLAM-certified veterinarians and 3 - 4 veterinary residents) include ensuring that research programs meet federal regulations, the requirements of AAALAC and currently accepted standards for providing adequate veterinary care and proper animal husbandry. The professional staff also provides advice to the research and teaching staff of UIC, conducting graduate and technical courses and supporting the protocol review system of the Animal Care Committee.

The centralized animal facilities of UIC were first opened in 1957. With the addition of the 60,000 sq. ft. Phase II building in 1972, the animal facility became one of the largest of its type in the country. The facility is organized on three floors. The lower level contains housing for large animals, dogs and cats; quarantine rooms for simian primates; the surgical, radiology and necropsy support services; and the machine shop. The dogs are all housed in spacious built in runs and are bedded on screened wood shavings. The first floor contains the diagnostic laboratories which includes clinical pathology, and the small animal holding and procedural rooms. Each of these animal rooms contains at least two "Illinois isolation cubicles", a procedural area and a chronic holding area. The second floor houses the primate facility including a breeding colony. The colony was established in 1969 to provide time pregnant macaques and baboons. The facility houses three species of macaques and is one of the country's largest colonies of breeding baboons.

The typical small animal suite consists of two rooms. The outer room (entered from a common corridor) has a sink, a movable laboratory bench and 2 or 3 cubicles to house racks of animals in isolation. The inner room, closed from the outer room by double doors, is used to house animals. Neurobehavioral testing of rodents is conducted within the outer room. Gas, air and vacuum outlets are provided in each outer room, permitting investigators to conduct simple laboratory procedures. All ventilating air is 100% fresh with approximately 15 air exchanges per hour. Each cubicle has an independent air supply and exhaust system. Drop down glass doors seal the cubicles from the room environment.

Polycarbonate cages with bed-o-cob bedding are available for housing rodents, whereas stainless steel cages are used to house rabbits. Steel and/or polycarbonate metabolism cages are available for collection of urine and feces from these species. Primates are housed in heavy duty aluminum or stainless steel cages equipped with automatic watering devices. Stainless steel metabolism cages are available for urine and feces collection from dogs and monkeys. Cats are individually housed in steel cages provided with a resting board and a litter pan. Dogs are kept in roomy pens on dry bedding. Beagle dogs are housed in runs which contain at least twice the required floor space for their length as described in the Animal Welfare Regulations regarding animal care. Additional space for exercise is therefore not required under the Animal Welfare Regulations. Typically, beagles are 23 - 25 inches long, which requires 13.4 square feet without additional

exercise space. Most of the runs are greater than 15.2 square feet, which would accommodate a beagle up to 27 inches long.

Within the animal facility, the primate facility provides individual housing for up to 400 non human primates. The second floor facility for the conditioned colony includes 7 animal rooms housing macaques, 7 animal rooms housing baboons and 5 multi purpose rooms. The multi purpose rooms are used for food preparation, short term post operative observation, physical examination, treatment and various minor non invasive procedures, such as blood or urine collection. The lower level of the animal facility is used as the in house primate quarantine area, and up to 4 rooms are available for quarantine procedures which must be completed prior to introduction of new animals to the second floor conditioned colony.

The primate facility specializes in housing Old World Macaque and baboon species, but has on many occasions housed other Old World and New World primates. The facility's equipment inventory includes a variety of multi purpose cages which can be used to meet the housing requirements of almost any type of study. While the primate facilities can accommodate a wide variety of studies and species, the baboon colony (including a breeding colony) described above is its most unique feature.

All animals are fed commercially obtained, species specific diets, including certified diets for GLP studies. Nonhuman primate diets are supplemented with fruit, vegetables, cereal grains, and nuts as part of an environmental enhancement program.

All GLP toxicology studies conducted by the Toxicology Research Laboratory utilize animal rooms in which temperature and humidity are monitored and recorded daily. All animals' rooms are on a defined light cycle (typically 14 hour light/10 hour dark). The animal room temperatures used in the animal facility are within the ranges specified in the NIH Guide for the Care and Use of Laboratory Animals, National Research Council, 1996.

The cage washing and sanitizing equipment, centralized in one area, consists of one tunnel type, automatic washing machine, two floor level, rack washers, a bottle washer, and an autoclave for sterilizing microisolator units.

From thirty to thirty five full time and three to six part time animal caretakers are engaged in various animal husbandry activities. The majority of these individuals have completed one of the nationally recognized animal technician certification programs. Continuing education of all employees is an integral part of the overall commitment of the administrative staff. The animal husbandry section is scheduled on a rotating basis to provide appropriate coverage of all areas 365 days a year.

Each floor of the animal facility is managed by an experienced ACLAM-certified senior laboratory animal veterinarian and is supported by a veterinary postdoctoral fellow, a supervisor of laboratory animal care and a staff of certified animal care technicians.

Working in collaboration with principal investigators/study directors, the staff supplies a complete support service for the conduct of a wide variety of experimental protocols.

The animal facility is fully accredited by AAALAC Intl. and has consistently received positive evaluations from representatives of the Food and Drug Administration, the World Health Organization, the National Institutes of Health and numerous pharmaceutical and contract laboratories. It has the capacity to house in excess of 10,000 mice, 5,000 rats, 900 guinea pigs, 800 rabbits, 240 dogs, 200 cats, 388 macaques, 170 baboons and variable numbers of other species such as ferrets and farm animals. Typical room configurations allow for up to 300 rats, 300 mice, 40 rabbits, 12 dogs, and 48 macaques per room.

### **CLINICAL PATHOLOGY LABORATORY**

The clinical pathology laboratory is located on the first floor of the animal facility complex and has been supporting the GLP toxicology activities of the UIC-TRL for 15 years. This laboratory is well equipped for measuring clinical chemistry, hematology and urinalysis parameters. Major instrumentation in the laboratory includes:

Advia 120 Hematology Analyzer  
Sysmex K1000 Hematology Analyzer  
Hitachi 704 Clinical Chemistry Analyzer  
Ciba-Corning 550 Express Clinical Chemistry Analyzer  
IL482 and IL282 Co-Oximeters  
IL1306 Blood Gas Analyzer  
Ion Specific Electrode Na<sup>+</sup>/K<sup>+</sup> Analyzer  
Electra 700 Coagulation Machine

Microbiological tests including fecal examinations are also routinely conducted by the clinical pathology laboratory. The laboratory maintains various centrifuges, refrigerators/freezers (including a -70<sup>0</sup>C freezer) and ancillary laboratory equipment.

### **NECROPSY FACILITY**

A necropsy room within the UIC animal facility is utilized for post mortem examinations and collection of necropsy samples. The necropsy room contains sufficient stainless steel tables, necropsy instruments, and necessary equipment for two simultaneous dog or monkey necropsies, or five simultaneous rodent or rabbit necropsies. The necropsy room includes down draft large animal necropsy tables and individual small animal necropsy vented hood stations. For neuropathology studies, rodents are perfusion fixed within the vented hoods. Photographic equipment is available in the necropsy room and provides immediate documentation as well as publication quality examples of gross necropsy findings.

### **ANALYTICAL CHEMISTRY LABORATORY (DRUG DISPOSITION RESEARCH LABORATORY)**

The analytical chemistry facilities, Drug Disposition Research Laboratory (DDRL), which supports the UIC-TRL are located in the UIC College of Pharmacy. This laboratory is across the street from the centralized animal facility, and is approximately two blocks from the UIC-TRL offices and general laboratories. All three of these facilities are connected by an underground tunnel. The DDRL provides GLP analytical chemistry support for toxicology research programs.

The DDRL facility comprises 1600 sq. ft., of which 1300 sq. ft. is dedicated to laboratory space and storage. The laboratory has two vacuum manifold systems for solid-phase extractions, and two fume hoods, evaporation systems and two fire proof solvent storage cabinets. Two refrigerators and three freezers are used for storage of chemical reagents, analytical standards and derivatizing agents. Two of these freezers are used for the storage of specimens. DDRL also has access to a -70EC freezer. All DDRL facilities to be involved in the proposed research have limited access through the use of keys. All laboratory notebooks, raw data files, test articles, and specimens for the studies are locked up when not in use.

The interdisciplinary nature of the DDRL enables studies to be undertaken in all areas of analytical chemistry. The laboratory has analytical facilities to support all aspects of pharmacokinetic and toxicologic studies requiring spectrophotometry, spectrofluorimetry, gas chromatography, high performance liquid chromatography, Fourier transformation infrared spectroscopy, and gas chromatography mass spectrometer techniques. Liquid chromatographic systems include diode array, electrochemical, fluorescence and UV Vis detectors. A Hewlett Packard 5973 MS detector with electron ionization, negative and positive chemical ionization capabilities coupled with 6890 gas chromatograph and autosampler is also available.

The following instruments are presently available in the UIC-DDRL. A mass spectrometer and the FTIR spectrometer are communal instruments, used for several ongoing programs. In addition, UIC-DDRL has access to UIC's Research Resources Center which houses state of the art analytical instruments such as a High Field NMR spectrometer and mass spectrometer. The remaining equipment will be made available for project as necessary.

Hewlett Packard GC-MS with electron impact and negative and positive ion chemical ionization

Mattson 4020 Fourier Transform Infrared (FTIR) Spectrometer coupled to a Spectra Tech IR Plan Microscope

Suprex SE 50 Supercritical Fluid Extractor

Waters 996 Photodiode Array Detector System with Millennium software and solvent gradient system

Waters 510 HPLC pumps (three) Waters 484 Variable Wavelength detector and 746 data module

Waters 486 Variable Wavelength detector

Waters WISP pneumatic autosamplers (two)

Spectra-Physics integrators 4270 (two)  
Waters 600E System Controller (multi solvent gradient system and column heater) (one)  
Perkin Elmer UV-Vis Detector LC55B (one)  
Perkin-Elmer integrator LC100 (one)  
Perkin-Elmer LS-4 Fluorescence detector (one)  
Kratos Spectraflow 773 HPLC UV detector (one)  
Kratos HPLC Fluorescence detectors (two)  
Hewlett-Packard 3395 integrator  
Beckman Liquid Scintillation System (one)  
Beckman Gamma 5500 Counter (one)  
Abbott ADx (FPIA) instrument

The laboratory has access to the necessary computer equipment to perform statistical analyses. The University of Illinois mainframe computer can be accessed which provides numerous statistical programs, including the latest versions of Statistical Analysis Software (SAS) and Statistical Programs for Social Studies (SPSS).

## **PATHOLOGY LABORATORY**

The PAI Illinois (Chicago) laboratory is the primary support facility for all pathology services.

### **PAI Illinois (Chicago Technology Park) Facility**

The PAI Illinois facilities serve as the toxicologic pathology laboratory TRL effort. The PAI-Illinois facility is located at the UIC Technology Park Research Center, 2201 West Campbell Park Drive, Chicago, Illinois. The laboratory is located on the UIC campus complex within walking distance of the UIC TRL. This facility consists of 2500 square feet of laboratory and offices with access to additional audit/conference rooms, and storage space. The PAI Illinois Laboratory is designed to accommodate high volume histology production while ensuring complete tissue accountability and integrity. The Laboratory utilizes an open design with each histology function (trimming, processing, embedding, microtomy, staining, coverslipping/labeling, quality control, and checkout) residing in a specific area. The design facilitates the flow of materials through each phase of the histology operation and aids in tissue accountability/case tracking. Additionally, the design and accompanying sophisticated tissue tracking system provides maximum capacity in the system without loss of specimen identity.

The PAI Illinois facility is equipped with building security and fire protection systems that include heat detectors and alarmed exit/entry doors. Sprinkler heads are uniformly distributed throughout the building (at least one per room) as part of the fire protection system.

### **Tissue Trimming, Processing, and Embedding**

The tissue trimming area is equipped with multiple trimming hoods designed for optimal tissue observation and recording of lesions during the trimming process. Each hood provides an exhaust at a rate of  $100 \pm 25$  linear feet per minute (lfm) face velocity. The processing area contains closed system Tissue-Tek VIP 3000 and Tissue Tek VIP-E-300 Tissue Processors with vacuum infiltration. The embedding area occupies two of the central work islands in the laboratory. Tissue Tek TEC Embedding Centers support the embedding function in this area. Also maintained in this area is a Fisher Scientific Isotemp oven for bulk preparation of paraffin to support the processing and embedding operations.

### **Microtomy**

The microtomy area is equipped with cutting stations organized in a centralized work area. For all sectioning, AO rotary, Olympus Cut 4055, Jung Paraffin, and Jung Plastic/Paraffin microtomes are used.

Each station has auxiliary lighting and a water bath. An Accu Edge disposable blade system is used for most sectioning. However, adjacent to this area, a Hacker microtome knife sharpener is maintained for servicing standard steel microtome knives when required.

### **Staining/Coverslipping/Labeling**

This laboratory includes an area for manual coverslipping, labeling, and H & E and special staining. Routine H & E stains are done automatically with a Hacker Linear Stainer. This area also contains exhaust hoods with a capacity of  $100 \pm 25$  lfm face velocity. The chemical fume hoods in this area are designed to contain potentially hazardous fumes that may result from special staining or other histopathologic techniques.

### **Quality Control/Checkout**

This area is equipped with a microscope to review completed slides in order to assess their quality and assure total tissue accountability. Shelving units and commercial block/slide storage cabinets aid in case assembly as well as facilitate materials checkout to the pathology staff.

### **Staff Offices and Data Management**

These offices are equipped with office furniture, IBM compatible and Macintosh computers, and microscopes (two with photographic capabilities). Current reference texts and pertinent journals are maintained in individual offices.

The PAI Illinois facility has the capability to provide automated data processing via microcomputer data handling systems. The LABCAT pathology data system is used for generation and tabulation of results for all non NTP-sponsored studies. This fully validated data management system is used by the UIC TRL/PAI pathologist as a direct entry process with histopathology findings being directly entered by the pathologist at the

time of microscopic evaluation. IBM compatible computers, with dedicated laser printers, are used for automated data processing/generation of all pathology information.

The PAI Illinois facility operates in full compliance with Good Laboratory Practice regulations (both FDA and EPA). In addition, all local, state, and federal environmental and health and safety regulations are observed as well as health and safety policies established by PAI for all corporate laboratories.

### **Molecular and Immunopathology Laboratory**

Specialized histochemistry, immunohistochemistry, cellular kinetics (cell proliferation and apoptosis) and molecular biology (in situ hybridization and PCR) tasks are performed in an independent laboratory/office suite within the PAI Maryland complex. This space consisting of approximately 4,500 square feet, is available for TRL within the PAI Maryland (Frederick) Laboratory and should protocols require immunohistochemistry (e.g., cell proliferation studies using PCNA or BrDU) or molecular pathology (e.g., in situ hybridization, apoptosis, and PCR technologies). This Laboratory contains the following equipment: two Shandon Cadenza Automated Immunostainers No. B128607R, Shandon and Leica Jung CM3000 Cryostats, two Revco Model ULT 1786 5AUA ultra-low temperature freezers, Forma 86C ultralow temperature freezer No. 916, Harris ultra-low temperature freezer model DLT 25V 85A14, General Electric Refrigerator No. TB13SLB, O'Haus Brainweigh B1500D Balance, Bell Multistir No. 6005, Thermolyne Cimerac 2 Heat & Stir, and Orion pH Meter 520A, as well as the appropriate special chemicals and reagents. Four fully equipped molecular biology rooms include: VWR Scientific Model 1535 incubator, VWR Model 1225PC waterbath, Tri Carb 1000TR Liquid Scintillation Analyzer, two Stovall Life Science Inc. Hybridization waterbaths, Hydro Picopure water system, UVP CL 1000 Ultraviolet Crosslinker and UVP GDS 7500 Gel Documentation System with white and ultraviolet transilluminator, Jouan BR4 Ultracentrifuge, Jouan RC10.10. Centrifuge, Perkin Elmer Gene Amp PCR System 9600, Stratagene RoboCycler Gradient 96, and two Heraeus Instruments Biofuge Pico centrifuges.

### **GLP ARCHIVES**

A UIC-TRL Archive is maintained in accordance with Good Laboratory Practices Regulations for all GLP studies. This includes a working Archives and a long-term Archives. The Quality Assurance Unit is responsible for its maintenance and upkeep. The Archives consists of approximately 500 square feet and contains raw data, wet tissues, slides, tissue blocks, draft study reports and final study reports. All raw data, specimens and reports are filed with an inventory. All original protocols, original SOPs, and equipment maintenance records are also kept in the Archives. PAI maintains its own Archive facilities.

### **CLINICAL TRIALS**

General Clinical Research Center is a specialized clinical trial facility at UIC

- Several hundred IRB protocols approved and studies conducted
- Hundreds of UIC professors and top medical specialists involved in clinical trials
- Accommodate research subjects of all ages, from newborn to geriatric populations
- Accommodate adult psychiatric subjects, outpatient psychiatry studies involving children

General Clinical Research Center Facility includes:

- Examination and procedure rooms
- Outpatient area
- Inpatient rooms
- Specimen processing laboratory
- Radioisotope laboratory
- Physiology laboratory
- Adult psychiatry beds
- A metabolic kitchen can provide special diets designed, calculated and prepared under supervision of the staff dietitian
- A database management system office

Nursing Staff

- Provides a core of nursing professionals 24/7
- Certified nurses provide drug administration
- Performs all necessary medical procedures and collects data
- Nursing staff also can be sent to other areas of the hospital/university to collect research data

Laboratory

- Processing of study samples
- Shipping of specimens
- Laboratory clinical chemistry analyses
- A radioisotope laboratory facility available for radioisotope studies.
- -20°C to -80°C refrigeration
- DNA extraction service
- Cell / Tissue incubation
- Cell Separation facilities

Investigational Pharmacy

- Assures appropriate storage, handling, drug accountability, information access and compliance with regulations including FDA
- UIC Investigational pharmacist dispenses all drugs
- Drugs accessibility 24/7
- Provides blinded medication dosage forms for placebo-controlled studies
- Aseptically prepares intravenous products (class 10,000)
- Prepares dietary supplements if needed

The biostatistics Center provides the following services:

- Study design

- Quantification and measurement issues
- Mathematical modeling
- Simulation studies

## RESEARCH RESOURCES CENTER

The UIC Research Resources Center (RRC) provides a number of facilities for the support of research projects. These are as follows.

### \*UIC Genomics Laboratory Capacities

- Affymetrix GeneChip Array Hybridization Scanning and Data Acquisition
- Glass Slide Array Hybridization
- Real-time Quantitative RT-PCR Analysis
- Human IMAGE cDNA Clone Selection of 40,000 Sequence-Verified Clones
- Custom Glass Slide Array Preparation
- Bioinformatics Support:
  - Assistance with Experimental Design
  - Data Analysis and Functional Annotation

### Equipment

- Affymetrix GeneChip System
- OmniGrid Accent micro-array spotter (Genomic Solutions)
- BioRobot 8000 (Qiagen)
- Primus multi-block system for high-throughput PCR (MWG)
- Confocal dual-laser scanner ScanArray Lite (Packard BioChip)
- ABI PRISM® 7900HT Sequence Detection System

### Software

- GeneSpring (Silicon Genetics)
- Spotfire DecisionSite software (Spotfire, Inc)
- Pathway Assist (Ariadne Genomics)
- ScanArray and QuantArray (Packard BioChip)
- MicroDB software and data mining tool (Affymetrix)
- Affymetrix Microarray Suite (Affymetrix)
- More at : <http://www.uic.edu/depts/rrc/cgf/index.html>

### \*UIC Core Protein Research Laboratory Capacities

#### Proteomics

- Ciphergen SELDI-TOF platform
- Novex, BioRad, and Pharmacia 1-D & 2-D Gel Electrophoresis Systems
- Bio-Rad Proteomeworks Spot Cutter
- Bio-Rad FX Pro Plus Multi-Imager System
- ABI Voyager DE-Pro MALDI-TOF Mass Spectrometer
- Hewlett-Packard (HP) 1100 liquid chromatograph using MSD ion trap XCT with on-line nano LC and nano electrospray ion source (Agilent Technologies, Palo

Alto, CA) optimized for a 75  $\mu\text{m}$  column format LC/MS/MS with Spectrum Mill software.

- Isotope-coded affinity tag (ICAT) method

\*Bioinstrumentation Laboratory This laboratory contains equipment for the design and construction of electronic devices, and test equipment for troubleshooting electronic problems.

\*Biostatistics Facility This facility provides statistical support services.

\*Electron Microscope Facility This facility provides seven transmission and one scanning electron microscopes, ancillary equipment and technical support. Related instruments include four microtomes, freeze etching equipment, and a variety of laboratory instruments related to EM processing. The facility includes eight microscope rooms, two darkrooms, two preparation laboratories, one ultramicrotome room, and two personnel laboratories.

\*Environmental Stress Facility This facility of approximately 1200 square feet contains three hypobaric chambers and two psychometric rooms in which pressure, temperature, vapor pressure, air volume movement, and lighting can be carefully controlled. Facilities are available for both human and animal environmental stress experiments.

\*Flow Cytometry Laboratory This facility maintains a Coulter 741 flow cytometer and cell sorter system, and trains users in the use of these instruments.

\*Instrument Shop Facility This facility supplies design, construction and repair services of mechanical equipment.

\*Microcomputer Laboratory This facility provides in house microcomputer support for scientific applications including data capture and transfer of data to the mainframe.

\*Scientific Computer Workstation This facility provides specialized computer assistance for users acquiring their data from atomic absorption, mass and nuclear resonance spectrometers; the flow cytometer; and electron microscopes.

\*Spectroscopy Facility This facility consists of three laboratories which provide research services for atomic absorption spectroscopy, mass spectroscopy and nuclear magnetic resonance spectroscopy.

## **LIBRARY OF THE HEALTH SCIENCES**

The Library of the Health Sciences serves as a major resource for UIC as well as for the other campuses, i.e., Peoria, Rockford and Urbana Champaign, which comprise the University of Illinois complex. The Library also serves as the Regional Medical Library for a ten state region under a National Library of Medicine program. Its collection is comprehensive, and includes materials in all of the subject fields of interest in the

teaching, research, and clinical programs of the units which it serves. Over 5,500 current periodicals are subscribed to, and more than 450,000 bound periodical volumes, books, government documents, and audio visual items are available. The Library is a member of the Biomedical Communication Network, and uses the computerized information retrieval systems of Bibliographic Retrieval Services, Inc., the National Library of Medicine, Lockheed DIALOG Information Systems, Institute for Scientific Information (ISI), System Development Corporation and Occupational Health Services. The Library's access to these systems makes available more than one hundred and fifty data bases in virtually every conceivable subject area, including MEDLINE, TOXLINE, CANCERLIT, HEALTHLINE, Excerpta Medica, Psychological Abstracts, Biological Abstracts, ERIC, and Science Citation Index.

### **Reproduction/Printing Facility**

The University maintains its own Reproduction Department which provides extensive reproduction capabilities including the collating and spiral binding of various documents such as proposals and reports. This resource is routinely used by the UIC-TRL.