Information provided in this booklet was collected for the Second Annual UAB Research Core Day.

This is not a comprehensive list of Cores available on the UAB Campus. Please contact uwirc@uab.edu if you are a core and not included in this booklet.
Also please keep an eye out for the new Cores website. We anticipate rolling out [www.uab.edu/research/cores](http://www.uab.edu/research/cores) in the next few months.
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Center for Metabolic Bone Disease  
Small Animal Bone Phenotyping Core

Director: Dr Timothy R Nagy  
934-4088, tnagy@uab.edu

Website: http://cmbd.path.uab.edu/smallanimal.htm

This core can provide measures of bone mineral density and content in live, anesthetized animals (and excised bones) using dual-energy X-ray absorptiometry (DXA) in animals ranging from 15 g to 130 kg.

With the Scanco micro CT we can image bones up to 36 mm in width and 80 mm in length. Six \( \mu \)m resolution is possible in bones of less than 12 mm in width. Information on trabecular bone (bone volume, density, trabecular number, separation, density and thickness) and cortical bone (bone volume, density, cortical thickness and moments of inertia) are available from the scans.

Three dimensional in vivo imaging of bone can be conducted using uCT (Imtek MicroCATII). Although not as quantitative as the Scanco 40 above, the Imtek instrument allows for relatively rapid screening of mice for bone abnormalities.

The Faxitron Model MX-20 is a tabletop X-ray machine suitable for taking radiographic images of small animals (mice, rats). It provides high resolution digital radiographs.

Supported by NIH P30AR046031
Comparative Pathology Laboratory

Director: Trenton R. Schoeb, DVM, PhD, DACVP
Email: trs@uab.edu
Phone: 934-2288

Website: http://main.uab.edu/Sites/ComparativePathology/
Staff contacts: http://main.uab.edu/Sites/ComparativePathology/contact/

Services
• Research animal histology: Routine and special paraffin processing, embedding, and sectioning; frozen sections; routine and special stains
• Veterinary clinical pathology: Hematology, clinical chemistry, urinalysis
• Training: Animal necropsy technique; tissue collection, fixation, and trimming; sample collection for clinical pathology
• Consultation: Animal pathologic techniques, design of experiments requiring collection of anatomic or clinical pathologic data from research animals
• Collaborative research support: Analysis of disease expression in animal models, pathologic phenotyping of genetically engineered mice, gross and microscopic photography, animal pathology cores for program projects

Cystic Fibrosis (CF) Animal Models Core

Director: David M. Bedwell PhD
Email: dbedwell@uab.edu
Phone: 934-6593
Website: http://www.uab.edu/cfcenter

The mission of the Animal Models Core is to generate and provide murine and other models for the study of cystic fibrosis. Mouse line generation by both oocyte micro-injection and embryonic stem cell gene targeting technologies are assisted by the Core. The Mouse Models Core also establishes breeding colonies of CF mice, and genotypes and provides these to UAB investigators.

If you have any questions please contact us at: GFICFRC@uab.edu

Core capabilities include:
• CF Mouse and Other Animal Models
• Murine nasal potential difference
• Chloride secretion perfusion protocol
• Sodium absorption protocol
• Bronchoalveolar lavage analysis
Diabetes Research and Training Center  
Animal Physiology Core

Director: Timothy R Nagy, PhD: 934-4088, tnagy@uab.edu  
Co-directors: Louis Dell'Italia, MD: 934-0850, loudell@uab.edu  
Kurt Zinn, PhD: 975-6414, kurtzinn@uab.edu  
Robert A Kesterson, PhD: 934-7206, kesterso@uab.edu  

Website: http://main.uab.edu/Sites/drtc/50232/

This core provides body composition assessment by chemical analysis, DXA, QMR, and micro-computed tomography; energy balance by measurement of metabolic rate, food intake, fecal output, activity and body temperature; cardiovascular assessment with echocardiography and blood pressure; imaging including bioluminescence and fluorescence imaging, gamma ray imaging, SPECT/CT and microPET/CT; and transgenic animal models including help with construct preparation, generation of transgenic / knockout mice, husbandry, colony management and genotyping.

Supported by NIH P60DK079626

Nutrition & Obesity Research Center  
Small Animal Phenotyping Core  
(Animal Models Core)

Director: Dr Timothy R Nagy: 934-4088, tnagy@uab.edu  
Assoc. Director: Dr Robert A Kesterson: 934-7206, kesterso@uab.edu  

Website: http://www.norc.uab.edu/corefacilities/phenotyping

This core provides the following services for small animals: indirect calorimetry for energy expenditure and substrate utilization; activity measured by infra-red beam breaks; body composition by direct carcass analysis, dual energy X-ray absorptiometry (DXA), quantitative magnetic resonance (QMR) and micro-computed tomography; icv cannulations, CNS injections and feeding experiments. In addition, the core has an aquatic research facility for zebrafish and killifish, to evaluate the specific or combined effects of nutrients, drugs and toxicants.

Supported by NIH P30DK056336
UAB Behavioral Assessment Core

Core Technical Director: Thomas van Groen
Email: vangroen@uab.edu
Phone: 934-5940
Website: www.neurosciencecore.uab.edu/corea.htm

We can provide most of the behavioral assessment that is needed for your projects that involve behavioral analysis or cognitive testing of animals.

Behavioral testing that is possible:
SHIRPA, basic neurological assessment; Motor Activity, e.g., Open Field, Rotorod, etc.; Anxiety, e.g., Elevated Plus maze; Zero maze, Circadian activity; Cognitive testing: T-maze, Y-maze, 8-arm maze, Barnes maze, water maze, fear conditioning, etc., etc.
Many other different functional or cognitive tests can be arranged as needed.

Please contact Dr. van Groen for scheduling of behavioral testing. We prefer to know at least 4 weeks before you plan your testing to be able to schedule testing.

If you have any questions please contact us at: vangroen@uab.edu

UAB Transgenic Mouse Facility

Core Director: Bob Kesterson, Ph. D.
Email: kesterson@uab.edu
Phone: 934-7206
Website: www.uab.edu/transgenics
Location: KAUL 606 (Department of Genetics)

We provide all services related to genetically modified mouse models (transgenic & knockout).

Services: DNA or ES cell microinjection, ES cell gene targeting, assisted reproduction and line cryopreservation. Consultations and custom services developed as needed.

Equipment:

- Autogen965 high-throughput DNA isolation robot
- 384 samples / 4 hrs (mouse tails, ES cells, plasmids, BACs)

Request for Service Forms and Pricing Information: Please visit our website.
If you have any questions regarding our services or special requests, please contact our project coordinator, Larry Johnson (lwj@uab.edu or call 934-2998).

Sponsors:
- Comprehensive Cancer Center (CCC)
- Diabetes Research and Training Center (DRTC)
- Rheumatic Diseases Core Center (RDCC)
- Core Center for Basic Skeletal Research (CCBSR)
- Hepato/Renal Fibrocystic Diseases Core Center (HRFDC)
- Nutrition & Obesity Research Center (NORC)
UAB Zebrafish Resource Facility (ZRF)

- Directors:
  Dr. Stephen Watts, Department of Biology, SAWatts@uab.edu
  Dr. Susan Farmer, Animal Resources Program, sfamer@uab.edu

- This core resource is located in the Research Support Building and includes a recirculation aquaria system (Aquaneering Inc.) with a central water conditioning/purification system supplying 27 racks (>2200 aquaria). The in vitro manipulation laboratory includes four embryo processing stations equipped with dissection microscopes, injectors, and micromanipulators; incubators; a pipette puller; and a fluorescent microscope, as well as other smaller equipment to be used for embryo manipulation. The ZRF is operational and available for all UAB investigators.
CFAR Virology Core

www.uab.edu/cfar/virology-core

Core Director: John Kappes, PhD, kappesjc@uab.edu,
205-934-0051, LHRB 610

- Provision of state-of-the-art BSL 2-3 laboratory space, equipment and professional staff.
- Education and training for “live” HIV virus studies.
- Provision of defined research reagents and materials.
- Biosafety training and BSL 2-3 Laboratory certification.
- Training in virologic assays, techniques and methods.

Molecular Biology Laboratory

Manager: David McPherson, dmcphers@uab.edu, 4-7755, BBRB 346

- DNA cloning, vector construction, site-directed mutagenesis.
- Recombinant protein expression and purification (E. coli).
- On-site molecular biology reagent supply center.
CFTR Cell Model and Assay Core

Director: Kevin L. Kirk, Ph.D.
Email: klkirk@uab.edu
Phone: 934-3122
Website: http://www.uab.edu/cfcenter

The Core provides epithelial cell lines expressing CFTR; assists with patch clamp and single channel analysis relevant to ion channel gating; histochemical and Usning Chamber analysis of CFTR. Core users are typically associated with the Cystic Fibrosis Research Center, but there is no limitation on who may access the Core.

If you have any questions please contact us at: GFICFR@uab.edu

Core capabilities include:
- Macroscopic assays of CFTR function
  - SPRQ
  - Usning chamber
- Histochemical assays
- RT-PCR
- Mouse primary airway epithelial cell culture
- Human airway epithelial cell line culture
- Lentiviral cell line derivation
- Zinc finger endonuclease based cell technologies
- Whole cell membrane patch analysis
- Single channel patch analysis
- Macropatch analysis

Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Expression Core

Director: Jeong S. Hong, PhD
Email: jhong@uab.edu
Phone: 975-8929
Website: http://www.uab.edu/cfcenter

The CFTR Expression Core facility assists researchers with the complex technology necessary to efficiently express the CFTR in experimental systems. The Core maintains a repository of reagents for studying CFTR, including over 50 constructs containing mutations that lead to disease and CFTR plasmid molecules used as part of gene therapy protocols in CF patients in the past. The core also assists with expression technologies using adenovirus and other technologies.

If you have any questions please contact us at: GFICFR@uab.edu

Core Capabilities include:
- Clone and express new CFTR constructs using:
  - Plasmids
  - Adenovirus
  - Vaccinia
- Characterize CFTR by:
  - Immunoblotting
  - Immunophosphorylation
  - Plasmid reagents
Monoclonal Antibody Development and Large-scale Production

- Vaccine design (peptides, proteins, gel slices, viruses, cells, TF cells)
- Strategic immunization protocols
  - Subtractive Immunization
  - Knock-out Mice
  - CDR-3 Altered Mice
- Large-scale Mab production and purification
- Epitope Differentiation (Oligoclonal Antiserum Design)
- Anti-Tag Mabs (i.e. Myc, Flag, HA, GST, GFP) and isotype-matched controls

IDDRC Recombinant Technologies Core B

- Contact: Scott Phillips, Ph.D., scottep@uab.edu; 975-2333
- http://www.mrrc.uab.edu/default.htm
- Services: To fulfill critical gaps in core support for projects related to developmental neurobiology. Specifically, this core along with Core C, has been designed to serve as a cost-effective, intellectual and technical focal point for the bench scientists who address issues of nervous system development and function that are germane or directly related to IDD.
Multidisciplinary Molecular Interaction Core (MMIC)

Core Director: Dr. Randall S. Davis
Core Manager: Dr. Edlue M. Tabengwa
Email: tabengwa@uab.edu
Phone: 975-0963

The core uses a GE Biacore T200 optical biosensor instrument which employs surface plasmon resonance (SPR) technology for monitoring label-free real-time biomolecular interactions; including proteins, nucleic acids, carbohydrates and lipids.

The Biacore T200 provides determinations of binding specificities; kinetics; affinity; concentration determination and epitope mapping.

Average analysis turn-around time is two to three business days. For detailed core availability and use please contact us at: tabengwa@uab.edu

The UAB Neuroscience Cores are designed to facilitate basic and clinical neuroscience research by NINDS-supported investigators.

Core A: The Behavioral Assessment Core provides testing of rodent behavior, including guidance in the research design, execution, analyses of studies, and running tests.
Contact Information:
Thomas Van Groen, PhD
934-5940
vangroen@uab.edu

Core B: The Molecular Detection Core assists in immunohistochemistry and in situ hybridization detection (ISH). The core assists investigators in determining optimal fixation conditions, tissue processing, protocol optimization, and experimental design.
Contact Information:
Terry L. Lewis, PhD
996-6556
tlewis@uab.edu

Core C: The Protein Interaction Core offers expertise in both prokaryotic and eukaryotic expression systems, yeast two hybrid analyses, and lentivirus production for gene expression and shRNA.
Contact Information
Mary E. Ballestas, PhD
996-6082
marybb@uab.edu
NIH O'Brien Kidney and Urological Research Centers Program
“UAB-UCSD O’Brien Core Center for Acute Kidney Injury (AKI) Research”

- Anupam Agarwal, M.D.
- Website: www.OBrienAKI.org
- The Biomedical cores include:
  - Core A - Resource for Clinical Studies of AKI (clinical research, genomics and biorepository)
  - Core B - Resource for Pre-Clinical Studies of AKI (animal models, small animal imaging and physiology)
  - Core C - Bioanalytical Resource (proteomics/oxidative stress markers/molecular pathology).
  - Biostatistical/Bioinformatics Resource that will provide support to the cores and pilot projects.

Pharmacokinetic (PK)/Pharmacodynamic (PD) Core

Core Director: Jennifer R. King, PharmD
Email: jenking@uab.edu
Phone: 934-2696

Services Provided
1. Pre-Clinical and Clinical Trial Design for PK/PD Analyses
2. Sample (plasma, urine, tissue, etc.) Analysis for Drug and/or Metabolite Quantitation

<table>
<thead>
<tr>
<th>TASK</th>
<th>RESPONSIBILITY</th>
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<tbody>
<tr>
<td>Sample collection</td>
<td>Principal Investigator</td>
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<td>Guidance on sample collection techniques and storage</td>
<td>Shared Facility</td>
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<tr>
<td>Sample preparation</td>
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<tr>
<td>Sample analysis</td>
<td>Shared Facility</td>
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3. Data Analysis and Interpretation

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<thead>
<tr>
<th>SOFTWARE</th>
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<tr>
<td>WinNonLin</td>
<td>Noncompartmental</td>
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<tr>
<td>ADAPT 5.0</td>
<td>Compartmental modeling</td>
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<tr>
<td>NONMEM</td>
<td>Population modeling</td>
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Email jenking@uab.edu for fee structure
UAB Peptide Synthesis Core Facility

Core Director: G.M. ANANTHARAMAIAH, Ph.D.

For synthesis: Palgunachari Mayakonda, Ph.D.
Phone: 205-934-1883
Email: palgun@uab.edu

For scientific matters: G.M. Anantharamaiah, Ph.D.
Phone: 205-934-1884
Email: ananth@uab.edu

This core facility is run by experienced peptide chemists with doctoral degrees in synthetic peptide chemistry. The mission of the peptide synthesis facility is to provide purified synthetic peptides in milligram to gram quantities chain length of < 40 residues containing natural and unnatural amino acid sequences to investigators within UAB and outside in a short period.

Core facility can also provide synthetic peptides with high purity either for antibody production or for biophysical/biochemical studies. We are also specialized in incorporating fluorescently labeled $^{13}$C- and $^{15}$C-amino acids into the peptide and dimethylation of lysine in the peptide sequences. Core facility also provide consultation to investigators conducting studies with peptides and several computer programs for selecting membrane associating peptides are available. Scientists conducting research in the structure function of peptide may utilize this core.

Instrumentation

Core facility has 4 automatic peptide synthesizers, Three Beckman analytical and two preparative HPLC units and Two Bio-Rad preparative FPLC systems for large scale purification.

Location: 1808 Boshell Diabetes Building Room, 640
Bioanalytical Redox Biology Core

B.A.R.B.

Core Director:  Scott Ballinger; Core Manager: Doug Moeller
Email: sballing@uab.edu or dmoeller@uab.edu
Phone: 934-4621 or 996-2660
Website: http://main.uab.edu/Sites/drtc/48095/

We can support areas of mitochondrial bioanalytical analysis, oxidative stress assessment, and atherosclerotic lesion quantification using state-of-the-art research facilities, specialized expertise, and quality control.

Services available: mtDNA Damage Analysis, High Resolution Respirometry with isolated mitochondria or permeabilized skeletal muscle bundles, Mitochondrial Proteins’ Activity Assays, Bioenergetic Analyses of Mitochondria and Cells, Mitochondria Isolation and Preparation, Aorta Lesion Assessment, Oxidative Stress (Redox) Measures: Glutathione and Ratios of Reduced (GSH) to Oxidized (GSSG), Aconitase Activity, Superoxide Dismutase (SOD2; mitochondrial MnSOD) Specific Activity (expression and activity), Oxidation of Thiols (reduced thiol levels measured), and Lipid peroxidation measures.

Please log into our website for available services. Consultations must be scheduled at least 2-3 weeks before your services.
Bioreactor Core

- Co-directors: Timothy Wick, PhD and Joel Berry, PhD
- Contact: Dr. Wick 934-8422 tmwick@uab.edu Shelby 807 and Dr. Berry 969-9661 jberry@uab.edu Shelby 802
- http://www.uab.edu/engineering/component/content/article/426
- The Bioreactor Core Facility provides bioreactor and bioprocess design and development services, bioreactor devices, and culture facilities to investigators from UAB, industry and other institutions. We are dedicated to the development of tissue engineered constructs, 3-D tissue mimetics, and stem cell therapies through the use of bioreactors. Core scientists also have expertise in regulating growth and differentiation of stem cells, tissue spheroids, and micromass cultures. Our work centers on basic, preclinical and translational investigations for tissue engineering and stem cell therapies.

Cellular and Molecular Neuropathology Core

Core Director: Steve Carroll, MD/PhD
Technical Director: Buffie Cofield-Miller, PhD
Email: clodbuff@uab.edu
Phone: 934-3287 or 934-2807
Website: www.alneurosciencecenter.uab.edu/CoreC.htm

The Cellular and Molecular Neuropathology Core provides neuroscientists with three inter-related services facilitating the histopathological and molecular characterization of genetically modified experimental animals. Core provides investigators with access to and expertise in the operation of:

- **State-of-the-Art stereology/morphometric system capable of performing several advanced image analysis routines.**
  - Fluorescent capabilities on two BX61 upright microscopes
  - Whole section imaging
  - Neuron tracing using NeuroLucida software
  - Stereologic cell quantification, volume and distribution using Stereo Investigator software

- **Advanced laser microdissection facility core**
  - Veritas instrumentation using LCM and UV cutting
  - Fluorescent capabilities
  - Use for RNA, Protein and DNA analysis

- **Expertise in the processing of tissues from mouse embryos and non-formalin-fixed brain tissue**
  - Paraffin tissue processing, embedding and sectioning on automated systems
  - Cryo-sectioning for thick and thin sections using UV capable cryostat or sliding microtome
  - Basic Cresyl and H&E staining
Comprehensive Cancer Center
Tissue Procurement Shared Facility

• Contact:
  – Terri Staples x 4-6071
  – tstaples@uab.edu

• Services provided: Remnant human tissue (normal, malignant, benign, diseased) from routine surgical resections and/or autopsies, processed per investigator specifications (e.g., fresh, frozen, fixed, paraffin-embedded blocks, slides)
Experimental Biomechanics Core

- Alan Eberhardt, Hoehn 261, 4-8464 aeberhar@uab.edu
- http://www.uab.edu/engineering/component/content/article/425
- The Mission of the Experimental Biomechanics Core (EBC) is to provide state-of-the-art equipment and trained personnel to facilitate measurement of mechanical properties of biological and man-made materials, structures, and constructs

Fluorescence Resonance Energy Transfer (FRET) Core

Director: Joanne Murphy-Ullrich, PhD
Contact: Shawn Williams, 205-934-7403 tzaron@uab.edu; Shelby Building Rm 135C

Website: http://www.uab.edu/engineering/component/content/article/423

The Fluorescence Resonance Energy Transfer core (FRET) is a cutting-edge state-of-the-art facility designed to provide High Resolution Microscopy for conducting FRET and other related Molecular Experiments. Trained personnel are on staff to provide consulting and training for investigators interested in using the core.

FRET instrumentation include a Zeiss LSM 710 Confocal Microscope with the latest Zeiss FRET software for doing Acceptor Photobleaching, Spectral Imaging, and Sensitized Emission. Also on the Zeiss is a Becker&Hickl Simple Tau High Performance Photon Counting system for conducting FRET experiments which require the use of a Fluorescence Lifetime Imaging (FLIM) detector. Other Equipment include a Leica DMRB SP2 Confocal for performing Acceptor Photobleaching to visualize FRET and a Nikon Eclipse Imaging System for Protein visualization and analysis. The FRET Core is located in The High Resolution Imaging Facility (HRIF) in Shelby Rm130.
Joint UAB Flow Cytometry Core (CFAR and APCF)

Flow Cytometric Analysis and Fluorescence Activated Cell Sorting

Directors: Dr. Olaf Kutsch (CFAR/4-1547, okutsch@uab.edu) www.uab.edu/cfar/flow-cytometry-core
          Dr. John D. Mountz (APCF/4-8909, jdmountz@uab.edu) www.medicine.uab.edu/rheum/APCF/

Center for AIDS Res FACS (BBRB 557)

- FACSARIA II - used for analytical and preparative flow cytometry. The design allows for acquisition rates of up to 70,000 cells per second and sorting rates up to 30,000 cells per second while maintaining high purity and cell recovery yields.
- BD LSRII - used for analytical flow cytometry, is installed with 4 solid state lasers (laser outputs at 355nm, 407nm, 488nm, and 635nm) and a fixed alignment fiber optic optical system.
- Highthroughput flow cytometry using a Hypercyt autosampler. Analyzes 96/384-well plate samples with a throughput as high as 7/25 minutes per plate.
- BioPlex Suspension Array System - a flexible, fluorescence-based easy-to-use multiplex analysis system that permits the simultaneous analysis of up to 100 different biomolecules (proteins, peptides, or nucleic acids) in a single microplate well.
- GUAVA EasyCyte flow cytometer, a BioTek Synergy HT fluorescence plate reader are available upon request.

Rheumatic Diseases Analytic and Preparative Cytometry Facility (SHELBY 271)

- BD FACSARIA III - used for analytical and preparative flow cytometry. This cell sorter is equipped with 4 lasers (405nm, 488nm, 561nm and 640nm) and 14 parameters and enables 2- and 4-way sorting.
- BD LSRIII - This analytical flow cytometer is equipped with 4 solid state lasers (laser outputs at 407nm, 488nm, 555nm, and 635nm) and a fixed alignment fiber optic optical system.
- FACSCompur - contains two lasers: a 488nm argon and a 633nm red laser. enables this instrument to detect up to four colors simultaneously, including FITC, PE, PerCP, and APC. It is also linked to a Macintosh computer and uses "CellQuest" software.

If you want the Joint UAB Flow Cytometry Core to continue to provide services to you, acknowledge the support from both cores in your publications. This is essential, so we can successfully compete to renew these grants.

NIH 5P30 AR048311 (Rheumatic Diseases APCF) — NIH 5P30 AI027667 (Center for AIDS Research)

Nanomatrix Scaffold Core

- Derrick Dean, PhD, BEC 254, 4/8450
- http://www.uab.edu/engineering/component/content/article/427
- The mission of this core is to provide biomedical researchers at UAB with the ability to fabricate nanostructured natural or synthetic fibrous scaffolds using electrostatic spinning and to characterize their thermal and rheological properties of these polymeric materials used for scaffolds. This Core has the potential to develop truly innovative “smart” biomaterials by utilizing the biologic expertise available at UAB through the BERM Center in extracellular matrix, developmental biology, and disease-based models to identify molecular targets for biomaterials development. Such materials will be used to direct stem cell differentiation, act as vehicles for gene delivery, or provide biomechanical scaffold support. Currently this core has state of the art capabilities for electrospinning of natural or synthetic polymers into nanoscale fibers. Planned addition of microfabrication capabilities will extend the ability of the Core to develop precisely patterned hierarchical, spatially organized 2 and 3-dimensional scaffolds that incorporate cells, growth factors and various nanomaterials into the structure to mimicking of the complex, hierarchical structure present in the anterior cruciate ligament, for example.
The Cell and Molecular Analysis of Biomaterials Core

- Susan Bellis, Ph.D.; MCLM 982A; 4-3441 and Yuanyuan Ma, M.D.; MCLM 992; 969-9433
- [http://www.uab.edu/engineering/component/content/article/424](http://www.uab.edu/engineering/component/content/article/424)
- The Cell and Molecular Analysis of Biomaterials Core was established to meet the growing need for biological testing of innovative new materials being developed at UAB. A principal objective of the Core is to provide services for evaluating cell responses to biomaterials. The Core performs standard in vitro assays of cell behaviors known to affect implant performance; for example, adhesion and survival of cells on biomaterial surfaces, cell proliferation, cytotoxicity, gene expression, and live imaging engineered GFP- or luciferase-tagged cells. In addition, the Core modifies standard cell biology protocols to accommodate a wide range of materials including metals, polymers and ceramics, of varying sizes and geometries. The Core also offers consultation services and training opportunities for users on campus.
UAB CMBD Core Laboratory

- Patty Lott, Laboratory Manager
- [http://cmbd.path.uab.edu/Bone%20Histopath.htm](http://cmbd.path.uab.edu/Bone%20Histopath.htm)
- Histology and histomorphometry on all tissue types
- Specializing in plastic sections of undecalcified bone, with or without implant materials

UAB Fermentation Facility

Core Director: N. Patrick Higgins, Ph.D.
Core Manager: J. Woody Robbins
Email: Woody@uab.edu
Phone: 934-5561
Website: [http://fermentation.bmg.uab.edu](http://fermentation.bmg.uab.edu)

The Fermentation Facility offers custom fermentation services for the production of microbial cells and their products in volumes up to 400 liters under BSL2 containment.

Tissue culture facilities are also available for the production of various animal cells such as HeLa S3 and 293 cells for adenovirus propagation.

Please log into our website for additional information.

If you have any questions please contact us at: Woody@uab.edu
We analyze tissue and cellular lysates to identify kinase activity with our PamGene PamStation peptide based micro-array to visualize changes in phosphorylation of 140+ Tyrosine and 140+ Serine/Threonine residues, and compare how their phosphorylation is altered in your samples. We use advanced pathway analysis and upstream kinase prediction to extrapolate cellular signaling networking maps, to analyze the kinases and pathways important in your samples.

This can be used to:
* Identify Kinase Response important post treatment (ex. drug/condition response).
* Identify Kinase Activity associated with Phenotype (ex. survival, growth, metastasis, outcome).
* Identify Kinase Targets for intervention and hypotheses based kinomic activity.

Please email or call to discuss how we can help elucidate pathways important in your model system. We are happy to help you from the original experiment design and optimization to yield the best results all the way through advanced pathway analysis to help you integrate our data into your existing.

The UAB Neuroscience Cores are designed to facilitate basic and clinical neuroscience research by NINDS-supported investigators.

Core A. The Behavioral Assessment Core provides testing of rodent behavior, including guidance in the research design, execution, analyses of studies, and running tests.
Contact Information:
Thomas Van Groen, PhD
934-5940
vangroen@uab.edu

Core B. The Molecular Detection Core assists in immunohistochemistry and in situ hybridization detection (ISH). The core assists investigators in determining optimal fixation conditions, tissue processing, protocol optimization, and experimental design.
Contact Information:
Terry L. Lewis, PhD
996-6556
tlewis@uab.edu

Core C. The Protein Interaction Core offers expertise in both prokaryotic and eukaryotic expression systems, yeast two hybrid analyses, and lentivirus production for gene expression and shRNA.
Contact Information
Mary E. Ballestas, PhD
996-6082
marybb@uab.edu
VSRC Computer Module

Module Director: Dr. Claudio Busettoni
Email: cbus@uab.edu
Phone: 934-2601
Website: http://www.vsrc.uab.edu

Software Development
- development of specialized real-time software systems for laboratory control and data acquisition systems
- development of customized hardware/software interfaces

IT Support
- computer assistance, software and hardware maintenance and repair
- assistance in computer purchasing

Web and network administration
- website authoring, hosting and development of web site
- development and maintenance of online scheduling services for shared instrumentation
- network administration for the Worrell building

Scientific poster printing

If you have any questions please contact us at: azotov@uab.edu

VSRC Electronics Module

Module Director: Dr. Christopher Girkin
Email: cgirkin@uab.edu
Phone: 325-8620
Website: http://www.vsrc.uab.edu

- design and development of custom electronics for research laboratories and classrooms
- technical assistance and support for VSRC members and students
- maintenance of a basic electronic stock for rapid prototyping, experiments, and “real-time” replacement of failed components
- repair and calibration of laboratory equipment and other research and classroom tools
- scheduled servicing of laboratory equipment

If you have any questions please contact us at: yildirim@uab.edu
VSRC Machine Shop Module

Module Director: Dr. Paul Gamlin
Email: pgamlin@uab.edu
Phone: 934-0322
Website: http://www.vsrc.uab.edu

- design and fabrication of new research instruments
- working together with the electronic and computer modules to develop optimized automatic computer-controlled servomechanisms
- repair, modification, retooling, and replacement of parts of existing equipments
- technical assistance for any kind of machine shop and mechanical needs, like sawing, drilling, milling and turning
- assistance in the selection and purchasing of tools, parts, and other mechanical equipment

If you have any questions please contact us at: jmillican@uab.edu

VSRC Molecular and Cellular Analysis Module

Module Director: Dr. Steven Pittler
Co-Director: Dr. Shu-Zhen Wang
Email: hkf@uab.edu
Phone: 934-6735
Website: http://www.vsrc.uab.edu

- user support for a variety of scientific equipment
- experimental design and execution
- protocol development
- teaching basic to advanced bench top technique
- networking with other UAB investigators
- assistance in on-line scheduling of equipment
- experimental data analysis
- non-invasive ocular imaging assistance
- comprehensive support in molecular biology and histology

If you have any questions please contact us at: hkf@uab.edu
Behavioral Science Core
Center for AIDS Research (CFAR)

- Joseph E. Schumacher, PhD, Director & Linda Moneyham, DSN, Co-Director
- Scott Batey, MSW, Program Manager
- http://www.uab.edu/cfar/behavioral-science-a-prevention-core

Services Include:
1. Conduct needs assessments of CFAR investigators to identify and tailor behavioral science methods for use in HIV/AIDS research;
2. Maintain a Core Service Unit composed of research assistants for cost efficient use of behavioral science methods by CFAR Investigators;
3. Offer behavioral science services/methods to CFAR Investigators for HIV/AIDS research in the areas of recruitment, assessment, prevention, and treatment;
4. Increase capacity of behavioral scientists at UAB through new faculty recruitment, nomination of new CFAR Investigators, and training of new or transitional scientists;
5. Advertise aims and resources of the Core, broker research partnerships between behavioral scientists and CFAR Investigators through active HIV/AIDS interdisciplinary research groups (IRGs) in priority behavioral science-related HIV/AIDS areas;
6. Advocate for persons living with HIV/AIDS for reduced stigma, people first rights, and human subject protection in HIV/AIDS research;
7. Offer evidence-based training in assessment, treatment, and program evaluation and research training to community agencies and individual scientists/trainees and students providing services to or researching persons living with HIV/AIDS.
Bionutrition Core of CRU

Contact: Betty E. Darnell, MS, RD, LD
Email: bdarnell@uab.edu
Phone: 975-8972
Website: www.ccts.uab.edu/pages/pcir_bionu.aspx

Services Offered:

- **Research Protocol – Consultation for Design, Development, and Implementation**
- **Controlled Feeding Studies/Monitoring Participants on Controlled Diets**
- **Calculated Research Meals for Feeding Studies**
- **Nutrition Education**
- **Body Composition Measurements - Anthropometrics**
- **Energy Expenditure Measurements**
- **Nutrient Intake Data - 4 day food records or 24 hour recalls using The Minnesota Nutrition Data System for Research (NDS-R) software**

Center for Clinical and Translational Sciences/Specimen Processing and Analytical Nexus (CCTS/SPAN)

Director: Dr. Jeffrey Edberg, 934-0894, 207 Shelby, jedberg@uab.edu

**Specimen Processing Lab (T1535)**

A specimen processing laboratory is adjacent to the Clinical Research Unit in rooms T1535 and T1531. This lab is available for CRU approved protocols for routine specimen processing. Processing activities include:

- Preparation of specimen aliquots (including specimen handling in a laminar flow hood)
- Preparation of aliquots tubes with labels
- Short term storage of research specimens including 4°C refrigeration, -20°C freezer space, and -80°C ultra-low freezer space.

For more information contact: Kathy Whitfield, 934-7567, kwhitfield@uabmc.edu

**Specimen Processing: DNA Preparation and Cell Line Lab**

The genetics study lab is located in Shelby 230. In addition to routine specimen processing listed below, this core lab also offers services that include but are not necessarily limited to:

- Preparation of mononuclear cells (MNC)
- Preparation of PBMC-immortalized lymphoblastoid cell lines
- Cryopreservation of cell lines and fresh MNC
- Preparation of DNA from various human sources such as blood, cultured cells, buccal swab, etc.

For more information about our cell line or DNA services, please contact: Kathy Whitfield, Felicia Hataway or Lareza Williams, 934-7838, kwhitfield@uabmc.edu, fhataway@uab.edu, lareza@uab.edu

**UA Biorepository Initiative**

The University of Alabama at Birmingham has a very unique opportunity to expand scientific insights into many various diseases and populations. As a part of the School of Medicine’s strategic initiative and in conjunction with the CCTS, this centralized resource of UAB Biorepositories assembles information about specimen collections including:

- A specimen inventory
- Standard operating procedures
- Reference to internal and external information related to Biorepository management.

In addition to building a dynamic wealth of information, this site (http://uab.myhealth.org/biorepositories) seeks to build a community of researchers interested in optimizing best practices in managing collections and in developing new collaborative opportunities.

Visit our website for a total list of services and price list (http://www.ccts.uab.edu/pages/SPAN-TTNM.aspx)
Clinical Core
UAB Center for AIDS Research

- Core Website: http://www.uab.edu/cfar/clinical-core

- Core Contacts:
  Director: Michael Mugavero (mmugavero@uab.edu)
  Co-Directors: James Willig (jwillig@uab.edu)
  Sonya Heath (heaths@uab.edu)

- Core Services:

Maintains and provides patient samples from a comprehensive and efficient Specimen Repository obtained from well-characterized HIV-infected patients, including those with unique phenotypes and with longitudinal specimen capture. Specimens available include plasma and PBMCs that are linked to our 1917 HIV Clinical Database.

Computerized Database and Informatics Services to store and access complex, interactive data including vast clinical, treatment, laboratory, administrative and behavioral data elements. Assistance with study design and data analysis. For more information, visit the UAB 1917 Clinic Cohort website at http://www.uab1917cliniccohort.org

HIV Clinical Research and Clinical Care Training Services are provided at all levels from students to research staff to faculty representing a variety of disciplines.

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**CLINICAL EXERCISE FACILITY**

1800 sq ft. core facility that is well-equipped to provide a clean, safe, and user friendly exercise training and testing environment for supervised exercise clinical trials, and contains two laboratories for a wide array of human physiological and performance tests.

Exercise Training Zone
- 17 resistance exercise stations
- 10 Olympic barbells, dumbbells, and over 2000 pounds of free weight
- 4 stationary cycle ergometers
- 3 treadmills

Cardiorespiratory Function Laboratory
- 12-lead ECG graded exercise stress testing
- Anaerobic power (i.e. maximal oxygen uptake (VO2_max))
- Anaerobic power
- Steady state cardiorespiratory and metabolic demand

Neuromuscular Function Laboratory
- Joint kinematics (electrogoniometry) and kinetics
- Maximum voluntary strength testing
- Electrically evoked maximum force measurement
- Neural variability testing
- Muscle fatigue testing
- Muscle activation via surface EMG
- Computerized balance assessment
- Computerized gait analysis

www.uab.edu/exercise
exercise@uab.edu
www.facebook.com/UAB.exercise

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**Meet the Team:**

Marcus Bannman, PhD, Director
Professor of Physiology and Medicine
Fellow, American College of Sports Medicine (ACSM)
mbannman@uab.edu

S Craig Tuggle, MA, Facility Manager
Masters degree in Exercise Physiology
ACSM Certified Health Fitness Instructor
NSCA Certified Strength and Conditioning Specialist
stuggle@uab.edu

**Location:**
Russell Clinic B42
1613 6th Ave S
Birmingham, AL 35294-3280
205-934-0221
Cystic Fibrosis (CF) Clinical & Translational Assay Core

Director: Steven M. Rowe, MD
Email: smrowe@uab.edu
Phone: 975-6385
Website: http://www.uab.edu/cfcenter

The CF Clinical & Translational Assay Core examines efficacy and toxicity of emerging CF therapeutics in human cells and tissues using human primary nasal airway epithelial cells and bronchial airway epithelial cells (from bronchoscopy or other surgical remnant tissues). The Core also provides expertise in the nasal potential difference measurement, an important endpoint in cystic fibrosis clinical trials, and a means to understand pathogenesis of cystic fibrosis and other metabolic diseases. These clinical assays help bridge the gap between preclinical animal studies and clinical trials and contribute to therapeutic development in the CF Research Center.

If you have any questions please contact us at: GFICFRC@uab.edu

Core capabilities include:
• Nasal potential difference assay in human subjects
• Primary airway epithelial cells
• CF bacterial isolates
Facility for Access to Clinical Enrollment Services (FACES)

Core Director: Mona Fouad, MD, MPH
Core Manager: Darlene Higgins
Phone: 975-7903
Website: www.UABFACES.com

One-stop shop for recruiting participants for any study
• Provide trained recruiters and interviewers
• Maintain mailing database of 3.5 million Alabama residents
• Screen, consent, schedule, and enroll participants in studies
• Provide expertise recruiting minorities and women
• Provide linkage between researchers and communities

While you focus on your research, we secure the participants

If you have any questions please contact us at:
info@uabFACES.com

Physiology and Metabolism Core
Core Director: Barbara Gower, PhD
Email: bgower@uab.edu
Phone: 934-4087

Human Energy Expenditure and Body Composition resources:
• respiration chamber and metabolic carts for measurements of 24-hour energy expenditure and substrate oxidation
• IRMS and GC/MS for assessment of stable isotopes (body composition by total body water; energy expenditure by doubly-labeled water)
• air displacement plethysmography for body composition assessment
• DXA for assessment of total and regional body composition
• analysis of intra-abdominal adipose tissue from computed tomography (CT) scans performed at the Department of Radiology
• analysis of infant body composition (0-6 mo) using PEA POD (air displacement plethysmography)

Hormone/Substrate Analyses resource:
• analysis of insulin, glucose, lipids, markers of inflammation, and hormones
• multi-plex capabilities using MSD technology: www.mesoscale.com
• indices of insulin sensitivity and secretion from OGTT, meal test, and IVGTT can be calculated using mathematical modeling
The Lung Health Center

Manager: deNay Kirkpatrick, CRNP
Email: denay@uab.edu
Phone: 934-5555
Website: www.uab.edu/lunghairhealthcenter

We provide complete PFT services and access to the most up-to-date mass spectrometry facility available. Available services include:

- PFTs
- Biospecimen Repository
- Recruitment
- Regulatory
- Pulmonary Proteomics Laboratory
- Mouse Pulmonary Analysis Core Facility
- Pulmonary Drug Discovery Program
- Pulmonary Immune Biomarker Core
UAB DRTC (P60)  
Metrics & Health Services Research Core

Core Director: Cora Elizabeth Lewis, MD, MSPH  
Email: bethlew@uab.edu  
Phone: 934-6383  
Website: http://main.uab.edu/Sites/drtc

Emphasizes methodological expertise in Phase II Translational Research (T2) in diabetes, diabetes complications, and cardiometabolic disease risk.

Services include:
- Consultation on state-of-the-art measurement tools relevant to diabetes prevention and control research
- Study design, data management and statistical support
- Access to large pre-existing data bases for exploratory secondary analyses
- Development of methodological innovations
- Implementation and dissemination of knowledge produced by the DRTC research base

Special emphasis on mentoring and support for DRTC pilot & feasibility project development and implementation in the areas of T2.

UAB HealthSmart

Contact: Theolisha Smith, MPH, ATC, Program Administrator  
E-mail: tsmith@uab.edu  
Phone: 205-999-2959  
Website: www.uabhealthsmart.org

UAB HealthSmart, a downtown wellness center, is the newest core facility of the UAB Minority Health & Health Disparities Research Center (MHRC), opened on March 15, 2011. It promotes UAB in the community, supports UAB through community outreach, facilitates the integration of research and service, and disseminates evidence-based practices. In collaboration with faculty and students from the SOM, SON, SHP, SOPH, SOD, and SOO, UAB HealthSmart offers: 1) Health evaluations, risk assessments, and free preventive screenings (blood sugar, cholesterol, blood pressure, body fat, vision, and other health tests); 2) Counseling sessions with nurses, exercise physiologists, and nutritionists to set goals; 3) Physical activity demonstrations and fitness classes; 4) Nutrition demonstrations; 5) Lunch & Learn health talks led by health-care professionals; 6) Health education brochures and other tools explaining chronic diseases and health risks; and 7) Chances to enroll in UAB research studies.

In its first 6 months (Mar-Sep 2011), UAB HealthSmart provided close to 2,000 services to about 800 participants, who reported they work for 114 companies/organizations and live in 20+ zip codes representing some of the most economically challenged areas in Jefferson County. In just one month (Aug-Sep 2011), 56 participants signed the UAB FACES Supplemental Questionnaire authorizing contact with opportunities to enroll in clinical trials.

In addition, taking advantage of the facility as an innovative training and rotation opportunity for UAB medical students, residents, and other health sciences graduate students, 89 students from 4 schools (SOM, SON, SOO, and SHP) have conducted rotations at UAB HealthSmart.
Vector Production Facility

Core Directors: Theresa Strong, PhD; Jackie Parker, PhD
Email: tvstrong@uab.edu; jnarker@peds.uab.edu
Website: http://www.uab.edu/vector
Phone: 975-9871
Contact person: David Dion, PhD ddion@uab.edu

* The UAB VPF has GMP-compliant clean room facilities and trained personnel for:
  * production of large-scale, high quality research-grade viral vectors
  * preparation of high quality research-grade cell banks
  * preparation of cell banks in support of human clinical trials
  * production of biologics [viral vectors; recombinant proteins] for Phase 1 human clinical trials

* Quality Control Assays: Sterility, endotoxin levels, bioburden, mycoplasma detection, virus titer
Biostatistics Core

Nutrition and Obesity Research Center

Core Director: Renee Desmond, Ph.D.
Email: desmond@uab.edu
Phone: 934-3722
Website: www.norc.uab.edu

This core provides expertise and advice in study design, power calculations, data acquisition and management, and appropriate statistical methods of analysis and reporting. Specific expertise is available for investigations involving statistical genetics.

Faculty Expertise:

- **David Allison, Ph.D.**
  Microarray data analysis, statistical genetics, secondary data analysis, survival analysis.

- **Renee Desmond, Ph.D.**
  Longitudinal data analysis, epidemiologic methods, analysis of survey data.

- **José Fernández, Ph.D.**
  Genetic admixture, QTL mapping, linear statistical models, gene-environment interaction.

- **T. Mark Beasley, Ph.D.**
  Measurement and methodology, multivariate statistics

- **Ray McCubrey, M.S.**
  SAS programming, management of complex and high-dimensional datasets.

If you have any questions please contact us at: desmond@uab.edu or dallison@uab.edu
CCC Biostatistics and Bioinformatics

Shared Facility
Director: Alan Cantor, Ph.D.
Email: acantor@uab.edu
Phone 4 6887
Website: http://www.dopm.uab.edu/bbsf.asp

Services Provided

- Developing and refining research questions
- Selecting the most suitable study design
- Developing a statistical analysis plan
- Developing and testing of data collection instruments
- Design of Data management systems
- Data receipt, management, and long term storage
- Developing and implementing quality assurance plans
- Designing and generating operational, data quality, and study outcome data reports for scientific presentations and publications
- Hi-dimensional data analysis e.g., Microarray and Proteomics data analysis

CCTS Informatics Consulting Service

Director: Elliot J. Lefkowitz, PhD
Email: elliott@uab.edu; Phone: 4-1946

Co-Directors: Eta S. Berner, EdD and Jonas S. Almeida, PhD
Assistant Director: Matt Wyatt, MSHI
Email: mwyatt@uabmc.edu; Phone: 4-0660
Website: www.bioinformatics.uab.edu

A service of the UAB Center for Clinical and Translational Sciences,
Biomedical Informatics Component

Core services include

- Consultation and collaborative assistance on the collection, management, and analysis of biomedical data including:
  - Bioinformatics: Basic molecular and -omics data
  - Clinical and Health Informatics: Clinical, outcomes, public health, and health services research
- Analytical services including assistance with:
  - Traditional sequence and genomics analysis
  - Microarray gene expression analysis
  - Analysis of data derived from deep-sequencing (Next Generation sequencing) technologies
    - Exome and genome sequencing
    - RNAseq studies
  - And everything else...
- Clinical research services including assistance with:
  - Clinical cohort discovery
  - Clinical data access
  - Surveys

Our goal is not to inundate the investigator with large, multi-megabyte (and gigabyte) size files, or massive spreadsheets. Our goal is to assist you in understanding the biological meaning of your data, allowing you to use that understanding to support publications, grants, and future research.
CFAR Sequence Analysis and Training Facility

Director: Elliot J. Lefkowitz, PhD
Email: elliott@uab.edu
Phone: 4-1946
Web site: www.uab.edu/cfar/dna-sequencing-core

A service of the UAB Center for AIDS Research

Core services include:
- Consultation and collaborative assistance on the collection, management, and analysis of basic biological data (Bioinformatics)
- Analytical services including assistance with:
  - Traditional sequence and genomics analysis
  - Microarray gene expression analysis
  - Analysis of data derived from deep-sequencing (Next Generation sequencing) technologies
    - Exome and genome sequencing
    - RNAseq studies
- Training and Education
  - Answering the question: “Just how the heck do I do this?”

Our goal is not to inundate the investigator with large, multi-megabyte (and gigabyte) size files, or massive spreadsheets. Our goal is to assist you in understanding the biological meaning of your data, allowing you to use that understanding to support publications, grants, and future research.

Diabetes Research and Training Center (DRTC)
Community Engagement Core

Core Director: Mona Fouad, MD, MPH
Core Co-Director: Andrea Cherrington, MD
Coordinator: Monique Jackson
Email: mjackson@dpm.uab.edu
Phone: 996-2432

How DRTC Community Engagement Core Can Help!

- Provide access to a well-established coalition made up of community members able to serve as interested and well-informed leaders in the fight against diabetes in their communities
- Provide expertise and assistance with grants related to diabetes and community-based participatory research
- Assist investigators with implementation of research practices, to include measures, communications, and outcomes assessments as they relate to diabetes
- Connect investigators to 35 trained Community Health Advisors willing to help DRTC investigators extend their reach into the community
- Help DRTC investigators pilot-test research tools and protocols to measure socio-cultural factors related to health disparities

UAB Diabetes Research & Training Center
Mass Spectrometry/Proteomics (MSP)  
Shared Facility  
James Mobley, Ph.D. (Director)  
Niesje Larson, B.S. (Lab Manager)  
Email: niesje@uab.edu  
Phone: 996-6213  
Location: THT 520  
Web Site: www.uab.edu/bmsf

Services:  
Whole Protein Analysis (non-digested, in solution):  
(A) High Throughput Protein Profiling using MALDI-ToF-MS (2-100kDa) for quality control (QC) studies or  
Biomarker Discovery Work (examples – Urine, Serum, Plasma, Saliva, EPS, CSF, tears, etc.)  
(B) Imaging Mass Spectrometry (IMS) and Histology Directed on-Tissue Protein Profiling by MALDI-MS (2- 
100kDa) (We section frozen tissue specimens, H&E stain, and carry out profiling in pathologic regions of 
interest, or the entire tissue section).  
(C) Terminal Sequencing, Top-Down, & Top-Down Directed Protein Identification.  

Peptide Analysis and Tandem MS/MS (i.e., enzymatic digests):  
(D) Protein ID by 1D-LC-ESI-MS/MS or MALDI-ToF-ToF-MS  
(E) Quantitative Proteomics by 1D- or 2D-LC-ESI MS/MS (Targeted, Label-free, Chemical or Metabolic 
Labels).  
(F) Post translational modification (PTM) Analysis by 1D-LC-ESI MS/MS with CID/ETD: (examples include 
sumoylation, phosphorylation, & glycosylation).

Office of Sponsored Programs  
Website: http://www.uab.edu/osp/  
Email: osp@uab.edu  
Phone: 934-5266

The OSP provides a wide range of services to UAB's research community and 
is committed to helping them navigate the complexities of extramurally 
funded sponsored programs. OSP supports faculty and staff with

- coordinating successful submissions and negotiations and post-award 
guidance for federal, non-profit and industry extramural awards;  
- clinical billing/fiscal approval/protocol activation best practices and 
processes;  
- continued process improvement, researcher's tools; building effective 
partnerships with our user community.

Please log into our website for additional information.

If you have any questions please contact us at: askosp@uab.edu
Southern Research’s core life sciences businesses are drug discovery & preclinical drug development. Preclinical contract services include:

- GLP-compliant studies
- BSL-2 & BSL-3 facilities
- In vivo and in vitro efficacy testing for therapeutics, immunologics, and vaccines
- Toxicology, including general, developmental & reproductive, and immunotoxicology
- Immunology
- Bioanalytical sciences/ADME/PK
- Real-time qPCR
- Species-Specific clinical pathology
- Radiation treatments
- Aerosol Inhalation

For more information please contact:
Michael Watson
Sales Manager, Drug Development
Email: WatsonM@SouthernResearch.org
Tel: 205-581-2203

SOUTHERN RESEARCH
Legendary Discoveries. Leading Innovation.
www.SouthernResearch.org

Survey Research Unit
Core Director: Herman R. Foushee, PhD
Email: rfoushee@uab.edu
Phone: 975-8030
Website: www.uab.edu/surveyresearch

Our mission is to produce scientifically valid survey results for our clients to achieve their research goals. We aim to be the UAB community’s first choice for survey research services. Our research has been published in numerous peer reviewed journals, posters, and presentations. We have expertise in survey design, proposal writing, interviewing, and reporting.

Data collection methods:
- Computer Assisted Telephone Interviewing (CATI) 40 stations
- Internet / Web-based
- Face to Face / Field-based
- Mail & Fax

Cost estimates provided at no charge.
THE BIRMINGHAM ATLAS OF HEALTH OUTCOMES (BAHO)

Shatomi J.S. Kerbawy MPH
UAB Center for the Study of Community Health
skerbawy@uab.edu
205-975-9477

The BAHO is a one-stop service for creating customized maps to visualize and analyze data

Why map your data?
• Discover patterns
• Generate new hypotheses
• Tell your story

Services:
• Central Access to Public Datasets
• Map-Making
• Data Analysis and Presentation
• Credibility and Trust (accuracy, privacy, security)

How to work with us?
• Tell us about the question you want to answer
• Describe your data
• Meet to establish a timeline to meet your deadline

UAB IDDRC Administrative Core A

• Contact: Anne Wailes, awailes@uab.edu, 975-0259
• http://www.mrrc.uab.edu/default.htm
• Services: Administrative support services to investigators at the UAB IDDRC including scientific and administrative leadership for the IDDRC as a whole and management of the fiscal and personnel activities necessary to achieve the objectives of the IDDRC.
UAB IT Research Computing Services

Contacts: Bob Cloud <BobCloud@uab.edu>, Dr. David Shealy <dls@uab.edu>, John-Paul Robinson <jpr@uab.edu>

Website: http://bit.ly/UAB_IT_Research_Computing_Services

Services: Build research platforms for data analysis, data storage, and web collaboration

- **Software and Web-Services:** Access popular tools for molecular modeling, protein docking, genetics, neuro-imaging, and many others on the research computing platform. Use MATLAB and the Distributed Computing Server™ package to build your own applications to run in a High Performance Computing (HPC) environment. Use wiki, code tracking, and communication tools to collaborate with peers and support your users. Work with us to build and deploy custom solutions to support research workflows for your science teams, like Galaxy a web-based genomics toolkit or ACE a patient cohort search tool.

- **Data Analysis and Modeling:** Use the campus HPC cluster, Cheaha, to efficiently analyze large data sets, model experimental systems and offload compute-intensive work from your laptop. Access national compute and data facilities via the Open Science Grid and NSF's XSEDE initiative.

- **Data Storage:** use the 200TB high-speed, parallel file system to stage large data sets on the compute cluster for analysis. Access personal storage on the research storage system to leverage an expanding collection of data services for archiving, collaboration and research application development.

- **Research Network:** a 10 Gigabit per second research network connects data analysis and storage resources across UAB. Leverage high speed networking to desktops and instruments. Transparent connectivity to regional and national high-speed networks provide efficient data transfers to collaborators and peers via National Lambda Rail and Internet2 networks. Build custom data networks to meet specific needs of on-campus or national research initiatives.

**Instrument / Apparatus Repair, Modification, Customization**

-or-

**New, Unique Instruments / Tools / Apparatuses Developed from Your Ideas and Sketches**

**Your Needs Can Become Reality at the UAB Research Machine Shop**

934-4393 Located in the Basement of the Lyons-Harrison Bldg, Rm 84

Manager: Chris Shoemaker, E-mail: cshoemaker@uab.edu, Website: www.uab.edu/engineering/machine_shop

We have provided these services for over 50 years for UAB researchers, clinicians, and technicians. Let us see what we can do for you. Come by or call us and we'll come to your location.

- **General Lab Equipment Repairs**
  - Electrical
  - Mechanical

- **Microscope Systems Repair / Modifications**
  - Adapters
  - Custom Stages
  - Custom Cells / Chambers
  - Manipulator Repair
  - Enclosures

- **Lab / Surgery Instruments**
  - Custom Needle Work / Modification
  - Surgical Instruments Modified / Repaired

- **Plastics Repair / Custom Fabrication**
  - Acrylic
  - Polycarbonate
  - Delrin
  - Teflon
  - Gel Trays, Experiment Enclosures, Guards, Covers, as well as many other polymer devices

- **Metal Fabrication**
  - Welding / Brazing / Soldering
  - Machining (CNC / Manual)
  - Bending
  - Stainless Steel, Carbon Steel, Aluminum, Titanium

Examples of Our Work

- Custom Hand Tool
- Custom Cell Adapters for Fat Staining Device
- Apparatus Enclosure
- Protein Vapor Diffusion Growth Cells
- Animal Tissue Testing Drop-Weight Tower
VISION SCIENCE RESEARCH CENTER

VSRC Director: Kent Keyser, Ph.D.
Email: ktkeyser@uab.edu
Phone: 975-7225
Website: http://www.vsrc.uab.edu

- The Vision Science Research Center (VSRC) was established in 1979 to draw together vision scientists from the entire university campus to foster interdisciplinary and interdepartmental collaborations.
- The center facilitates scientific collaboration by providing research support modules for its members so that their research may proceed more efficiently.
- These support modules include a sophisticated molecular/cellular analysis suite, a state-of-the-art electronics module, an extensive computer laboratory, a fully-equipped machine shop, and an administrative module.
- In addition, the VSRC provides community outreach for all aspects of vision through its shared ocular tissue and education outreach modules.
- Priority is given to VSRC members.
CFAR & CCC DNA Sequencing Core

Core Manager: Maria Salazar
Email: mgs@uab.edu
Phone: 934-3972
Website: www.uabcfar.org/dnasequency.html

- Automated DNA sequencing provided in 24-48 hour turn-around!
- Costs only $6/reactions and $4/reaction when full plate submitted

- DNA sample submission instructions:
  ✤ Web-based dnaLIMS for order entry and retrieval (seqcore.uab.edu)
  ✤ First-time users must access the site to setup an account
  ✤ Samples are brought to MCLM 852
  ✤ Sample prep instructions and available primers on web sites

- Other services available: Microsatellite Analysis and Real-time PCR
Heflin Center Genomics Core Facility

Core Director: Molly Bray, PhD
Phone 5-7051
Email: mbray@uab.edu

Core Co-Director: Michael Crowley, PhD
Phone 5-2013
Email: mcrowley@uab.edu

Bioinformatics Director: David Crossman, PhD
Phone 6-4043
Email: dcrossman@uab.edu
Website: www.heflinmetics.uab.edu

The Genomics Core has the latest in DNA analysis technology, including:

- Illumina iScan and BeadXpress systems and Affymetric system for:
  - Large and medium scale SNP genotyping
  - Human and mouse whole genome DNA methylation analysis
  - Gene expression analysis and more

- Illumina Next-Generation Sequencing (NGS) services (in conjunction with the Stem Cell Institute) are available for:
  - RNA-Seq
  - Exome-Seq
  - ChiP-Seq
  - Whole genome sequencing

Other services include:
- Fluorescent DNA sequencing
- SNP genotyping
- Human cell line DNA fingerprinting
- Discount oligonucleotides from IDT

The Genomics Core also provides comprehensive analysis for microarray and NGS using:
- GeneSpring 11.5
- Galaxy
- Ingenuity Pathway Analysis

IDDRC Developmental Genomics
Core D

• Contact: Ravin Winfrey, rwinfrey@uab.edu; 996-2916

• http://www.mrrc.uab.edu/default.htm

• Services: Microarray analysis, high-throughput DNA sequencing, high-throughput genotyping and SNP analysis, bioinformatics resources
Center for the Development of Functional Imaging

Core Director: Paul Gamlin  
Email: pgamlin@uab.edu  
Phone: 934-0322  
Website: www.cdfi.uab.edu

Located at 924 South 18th Street, this facility contains a 4.7 T 60 cm bore actively shielded vertical magnet optimized for non-human primate fMRI studies. The system uses a Magnex gradient set and a Varian UnityInova console. Visual stimuli are presented using an Avotec fiber-optic system, and eye movements are monitored with an embedded binocular eye tracker. A number of workstations are available on-site for data analysis and for the development of pulse sequences. In addition, the building houses a training area, vivarium, and offices. The CDFI is affiliated with the Vision Science Research Center located in the nearby Worrell Building, and makes extensive use of the electronics and computer facilities there, as well as the machine shop.

- Services
  - human and non-human primate fMRI experiments
  - in-vivo optical imaging
  - design of MRI compatible research equipment
  - set up software and workstations to analyze data from your experiments
  - training in fMRI data analysis

- Equipment
  - 4.7T vertical Varian UnityInova MRI (30 cm diameter clear bore)
  - experiment control, visual stimulus generation, and data analysis workstations

If you have any questions please contact us at: mbolding@uab.edu
Civitan Functional Neuroimaging Lab

Core Director: David C. Knight, PhD
Email: knightdc@uab.edu
Phone: 996-6344
Website: http://138.26.50.31/FNL_Calendar

The CFNL houses a research dedicated 3T Siemens Allegra head-only MRI scanner for structural and functional imaging. The facility is supported by highly trained personnel including a full time MR technologist.

Scans available: Functional (BOLD) MRI, Diffusion Tensor Imaging, Magnetic Resonance Spectroscopy, as well as other traditional T1 and T2-weighted structural scans.

The CFNL has state-of-the-art equipment for audio/visual stimulus presentation and response devices (e.g. button boxes) to monitor behavior during scanning.

If you have any questions please contact us at: knightdc@uab.edu
IDDRC Neurobiology Imaging and Tissue Processing Core C

- Contact: Alison Margolies, kamargo@uab.edu, 934-0743
- http://www.mrrc.uab.edu/default.htm
- Services: To provide state-of-the-art equipment and technical support for experimental projects on the assembly and modulation of synaptic, neuronal, and glial structure and function. By sharing technical expertise, equipment, facilities, and professional staff, the Core facilitates cost-effective, cross-project collaborations.

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**Neuroimaging Core**

**Alabama Neuroscience Blueprint Core Center**

Core Director: Kent Keyser, PhD  
Co-Directors: Lucas Pozzo-Miller, PhD and Kurt Zinn, PhD  
Technical Director: Tong Ye, PhD  
Email: tongye@uab.edu  
Phone: 9345626  
http://www.alneurosciencecenter.uab.edu/CoreD.htm

**Service:** In vivo and in vitro imaging neuronal structure and function in experimental animals

**Equipment:**

- A multiphoton laser scanning fluorescence microscope (*Prairie Technologies Ultima IV*) for in vivo brain imaging through thinned skull or craniotomy, as well as for in vitro imaging of tissue slices (e.g. acute/cultured brain slices). Equipped with two ultrafast laser systems and two independent scanners in the microscope, this system can also do imaging experiments involving photo-activation and photo-uncaging.

- An optical fiber based laser scanning confocal system (*Leica FCM 1000*) for cellular imaging at depths not reachable by multiphoton through the skull or cranial window. With its optical-fibered microprobes the Leica FCM1000 is designed to access virtually anywhere in the living animal, for example, imaging the deep brain and the peripheral nervous system. Imaging resolution: 3.3 micron. Excitation wavelength: 488 nm.

- Image processing and analysis with *Imaris* (Bitplane) and *Neurolucida* (MicroBrightField, Inc.) Two workstations loaded with Imaris full version (v 6.15) and Neurolucida (v 9) are installed for off-line neuron tracing, image analysis and processing.
Small Animal Imaging Facility

Core Director: Kurt R. Zinn, DVM, Ph.D.
kurtzinn@uab.edu
975-6465

Co-Director: Hyunki Kim, Ph.D.
hyunki@uab.edu
996-4088

http://medicine.uab.edu/radiology/6652/ or www3.ccc.uab.edu/

The facility supports preclinical research by providing repeated, non-invasive, in vivo IMAGING of
1) tumor location and mass, 2) receptor expression (tumors, brain, etc) 3) organ function, 4) metabolism,
5) Perfusion, and 6) response to therapy.

Facilities located in Volker Hall and Boshell (Boshell instruments will relocate to WTI in 2011)

Imaging is accomplished with a range of imaging modalities, including gamma camera imaging, X-ray CT,
PET/CT, bioluminescence, fluorescence, magnetic resonance (MR) imaging, and ultrasound imaging.

Request must be placed at least one week in advance.

It is expected that the successful application of small animal imaging will speed efforts to translate basic
research to human clinical trials.

If you have any questions please contact ssamuel@uab.edu or bdunklin@uab.edu

The Human Imaging Shared Facility

Core Director: Desiree Morgan, MD
Core Administrator: Todd Smith, PhD, RN, MSHA, MBA
Imaging Coordinator: Haley Witte, RT (R)(CT)
Email: radresearch@uab.edu
Phone: 975-4559

The HISF provides support for research involving imaging services at TKC, UAB
Hospital, and UAB Highlands.

Services Available:
• Protocol reviews and assistance with protocol development for studies involving
  imaging services
• Price quotes for non-routine exams and procedures
• Coordination of research activities involving radiology at TKC, UAB Hospital, or UAB
  Highlands
• State-of-the-art image acquisition
• De-identified image transfers
• Tumor metrics
• Biomarker and post-processing support
IDDRC Neurobiology Imaging and Tissue Processing Core C

- Contact: Alison Margolies, kamargo@uab.edu, 934-0743
- http://www.mrrc.uab.edu/default.htm
- Services: To provide state-of-the-art equipment and technical support for experimental projects on the assembly and modulation of synaptic, neuronal, and glial structure and function. By sharing technical expertise, equipment, facilities, and professional staff, the Core facilitates cost-effective, cross-project collaborations.
Cryo-Electron Microscopy Facility

PI: Terje Dokland, Ph.D.
Email: dokland@uab.edu
Phone: 996-4502
Web site: http://main.uab.edu/show.asp?durki=119751
Located in Shelby B40, 1825 University Blvd

- Services offered:
  - High resolution electron microscopy and tomography of stained and unstained specimens, including cryo-EM of fully-hydrated samples, such as protein complexes, viruses, fibers, liposomes and whole prokaryotic cells.

- Equipment:
  - FEI Tecnai F20 200kV field-emission gun microscope equipped with a high-sensitivity Gatan 4k x 4k CCD camera and tomographic acquisition software.
  - Leica Ultracut UC6 cryo-ultramicrotome
  - FEI Vitrobot cryo-sample preparation robot.

- The instruments are available for use by trained users (training is available) or as a core service. Contact Melissa Chimento (mchimento@uab.edu) 934-1926 or Cindy Rodenburg (cindyr@uab.edu) 996-4510 for scheduling.
X-ray Crystallography Shared Facility

Core Director: Dr. Larry DeLucas, Director
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The X-ray crystallography facility can assist UAB researchers in a variety of ways including:

- Improvements in protein solubility and physical stability (via our novel technology, “high-throughput self-interaction chromatography”)
- Differential scanning and isothermal calorimetry
- Protein-protein interactions (via Biacore)
- High-throughput aqueous and membrane protein crystallization
- Crystallographic structure determination (via in-house or synchrotron x-ray systems)
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<thead>
<tr>
<th>Center Name</th>
<th>Director</th>
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<tbody>
<tr>
<td>Biomatrix Engineering &amp; Regenerative Medicine Center</td>
<td>Tim Wick, PhD, Joanne Murphy-Ullrich, PhD</td>
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<tr>
<td>Center for Aging</td>
<td>Richard Allman, MD</td>
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<td>Center for AIDS Research</td>
<td>Michael Saag, MD</td>
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<td>Center for Biophysical Science &amp; Engineering</td>
<td>Larry DeLucas, PhD</td>
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<td>Center for Cardiovascular Biology</td>
<td>Steven Pogwizd, MD</td>
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<td>Center for Clinical &amp; Translational Sciences</td>
<td>Lisa Guay-Woodford, MD</td>
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<td>Center for Computational &amp; Structural Dynamics</td>
<td>Jere Segrest, MD, PhD</td>
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<td>Center for Cranio-facial, Dental and Oral Disorders</td>
<td>Mary McDougall, PhD</td>
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<td>Center for Emerging Infections &amp; Emergency Preparedness</td>
<td>Richard Whitley, MD</td>
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<td>Center for Exercise Medicine</td>
<td>Marcus Bamman, PhD</td>
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<td>Center for Free Radical Biology</td>
<td>Victor Darley-Usmar, PhD</td>
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<td>Center for Information Assurance</td>
<td>Anthony Skjellum, PhD</td>
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<td>Center for Metabolic Bone Disease</td>
<td>Majd Zayzafoon, MD</td>
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<td>Center for Outcomes &amp; Effectiveness Research &amp; Education</td>
<td>Kenneth Saag, MD, MSc</td>
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<td>Center for the Study of Community Health</td>
<td>Max Michael, III, MD</td>
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<td>Center for Women’s Reproductive Health</td>
<td>John Hauth, MD</td>
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<td>Civitan International Research Center</td>
<td>Harald Sontheimer, PhD</td>
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<td>Comprehensive Arthritis, Musculoskeletal &amp; Autoimmunity Center</td>
<td>Robert P. Kimberly, MD</td>
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<td>Comprehensive Cancer Center</td>
<td>Edward Partridge, MD</td>
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<td>Comprehensive Diabetes Center</td>
<td>Anath Shalev, MD</td>
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<td>Comprehensive Neuroscience Center</td>
<td>David Standaert, MD, PhD</td>
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<td>Gregory Fleming James Cystic Fibrosis Research Center</td>
<td>Eric Sorscher, MD</td>
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<td>Hefflin Center for Human Genetics</td>
<td>Bruce Korf, MD, PhD</td>
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<td>Minority Health &amp; Health Disparities Research Center</td>
<td>Mona Fouad, MD</td>
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<td>Nanoscale Materials &amp; Biointegration</td>
<td>Yogesh Vohra, PhD</td>
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<td>Nephrology Research &amp; Training Center</td>
<td>Paul Sanders, MD</td>
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<td>Nutrition Obesity Research Center</td>
<td>David Allison, PhD</td>
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<td>Vision Science Research Center</td>
<td>Kent Keyser, PhD</td>
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The Second annual UAB Research Core Day was held October 31, 2011. A special thanks goes out the University Wide Interdisciplinary Research Center (UWIRC) Directors and Administrators as well as all of the various Research Cores and Service providers that participated in this Core day.