# DIRECTORY OF FEDERAL LABORATORY AND TECHNOLOGY RESOURCES pdf

## 1: List of federal agencies in the United States - Wikipedia

*Describes the individual capabilities of each of 1, unique resources in the federal laboratory system, and provides the name and phone number of each contact. Includes government laboratories, research centers, testing facilities, and special technology information centers.*

But producing prototypes is a drag. Each requires a series of labor-intensive, custom molds that can take up to 16 months to complete before the blade can be built and tested. Sandia led a partnership that demonstrated a way to reduce this time to just three months. The demonstration focused on a relatively small meter blade, but if applied at larger scales in industry, designers could take more risks with experimental designs and accelerate innovation in wind technologies. Sandia led the design of the blade, including an assessment of the feasibility of using additive manufacturing. TPI consulted on the mechanical parameters and performed the structural design and computer aided design geometry required to successfully mold the blade. Oak Ridge printed the mold in several sections in just two weeks, with the final assembly and manufacturing of the blade at TPI. Collectively, these poor insulators lose a tremendous amount of heating and cooling energy. Sandia National Laboratories materials physicist Paul Clem holds a sample of nanoparticle coated glass. Photo by Randy Montoya Click on the thumbnail for a high-resolution image. The IR Dynamics-Sandia team creates the films with nanoparticles of the compound vanadium dioxide. While some materials, such as aluminum, reflect light and heat, and others, such as glass, transmit them, vanadium dioxide is temperature-sensitive thermochromic and does both. The nanoparticle films transition from heat-transparent to heat-reflective in response to the temperature. Applying an energy-efficient film would likely be much less expensive than a full window replacement, so consumers would enjoy greater savings sooner. We look forward to engaging with additional partners to make these and other innovations more widely available. The awards program annually recognizes federal laboratories and their industry partners for outstanding technology transfer efforts. Since its establishment in , the organization has presented awards to nearly federal laboratories, becoming one of the most prestigious honors in technology transfer. Sandia Labs has major research and development responsibilities in nuclear deterrence, global security, defense, energy technologies and economic competitiveness, with main facilities in Albuquerque, New Mexico, and Livermore, California. Sandia news media contact: Troy Rummler, trummle sandia.

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## 2: Resources and Scientific Environment

*Directory of federal laboratory & technology resources: a guide to services, facilities, and expertise Responsibility prepared by the Center for the Utilization of Federal Technology, U.S. Dept. of Commerce, National Technical Information Service.*

A range of services are provided including: This equipment is designed to irradiate biological samples at variable doses. Adapters allow exposure for both tissue culture samples and small rodents. Laser Capture Microdissection Facility The state-of-the-art technology of Laser Capture Microdissection LCM Facility provides researchers with the ability to accurately analyze DNA, RNA and protein from pure populations of cells, such as tumor cells that are captured from complex heterogeneous tissue samples. Protocols have been developed and optimized for acquisition of high-quality RNA and DNA from both frozen and formalin-fixed, paraffin-embedded tissue. Care is taken to preserve the integrity of the samples at all times, ensuring high quality retrieval of molecular targets. Services provided in the LCM facility include: Viability of the IR laser-enabled LCM technique has been shown for a variety of different cell types. The LCM procedure is remarkably simple and robust. The method is extraordinarily gentle and ideal for microdissection of single cells or small numbers of cells. The LCM system utilizes a laser microbeam that melts a thermoplastic membrane that sticks to the selected cells, which can then be lifted and secured in a microfuge tube containing the appropriate extraction solutions. The transferred tissue on the film retains its original morphology, thereby allowing microscopic verification of the specificity of the captured material. Using this strategy, a single small cluster up to thousands of cells can be procured safely and without contamination. The Lipidomics Shared Resource builds on unique expertise at MUSC in sphingolipid biology, chemistry and analysis and their role in signal transduction and cell regulation. Sphingolipid metabolism assumes a key role in the complex mechanisms regulating cellular stress responses to environmental changes. Several sphingolipid metabolites act as bioactive molecules, and their individual contribution to the regulatory pathways that govern cell growth are being established. This offers promises for new molecular insights into tumor growth and metastasis and emphasizes the needs to analyze sphingolipid components, examine sphingolipid chemistry and regulation of sphingolipid metabolic pathways. Monitoring changes in sphingolipid composition in normal and cancer environments will provide one of the missing links in the search for a novel and effective therapy. The Lipidomics Shared Resource includes analysis and synthesis units. Resource personnel provide conceptual and practical training in various aspects of lipidology, qualitative and quantitative analysis of lipid components from different biological materials cells, tissue, biological fluids , synthetic molecular tools to study lipid metabolism functionalized and fluorescent ceramides, site-specific radioactive sphingolipids , diversified synthetic lipids and analogs for cellular, in vitro, and in vivo studies organelle-targeting sphingolipids and organelle-targeting inhibitors of sphingolipid metabolizing enzymes. Resource personnel also assist investigators in experimental design, selection of lipid of interest and interpretation of the analytical results. This sensitive and specific analytical methodology can be applicable to a broad spectrum of diversified chemical compositions of sphingolipids and glycerolipids. Instrumentation for lipid sample preparation and MS analysis: Atlas nitrogen generator for providing a steady supply of high purity nitrogen for optimal performance for both MS instruments, Savant speed-vacuum evaporator, two nitrogen evaporators, Beckman centrifuge, and Shimadzu UV spectrophotometer. Mass Spectrometry Facility The Mass Spectrometry Facility , housed within the Department of Pharmacology, provides expertise, services, education, and training to enhance biomedical research endeavors through mass spectrometry-based proteomics. The facility also assists in the development of customized applications for the isolation, detection and characterization of posttranslationally modified peptides. The Orbitrap Elite Mass Spectrometer provides services to couple quantitative approaches to modification-specific experiments. Investigators are developing methodology to analyze alterations in posttranslational regulation that impact signal transduction, epigenetic modulation, and

the response to therapeutics with the goal of enabling investigators to discover molecular mechanisms underlying disease progression and therapeutic responses that may not be revealed through genomic studies. The facility will also assist in the development of customized applications for the isolation, detection and characterization of posttranslationally modified peptides. Sites of modification are verified by manual inspection of the data. Please consult facility staff for feasibility and pricing of quantitative proteomic experiments, the implementation of specialized approaches with quantitative proteomics, and MALDI-imaging mass spectrometry for tissue imaging experiments. Mass spectrometers and associated proteomic applications available include: MTF services are available to researchers investigating mineralized tissue biology and function at MUSC and other institutions. The facility is equipped with state of the art equipment and experienced staff to assist both new and experienced researchers: The facility provides microCT scanning and analysis with a Scanco uCT40 ex vivo scanner with an analysis workstation and server. The scanner is capable of up to 6 um resolution scanning of samples up to 6 mm in diameter. Digital image acquisition and analysis services provided by an upright Olympus BX61 automated microscope equipped with a digital color camera and motorized stage, 1. Histological analysis of mineralized samples including the bones and dentition can present unique challenges. The MTF offers several services to assist researchers in the generation and analysis of these samples. The facility operates specialized equipment, including a Microm HM motorized rotary microtome equipped with a tungsten carbide blade, Buehler diamond saw and grinder for generation of plastic and ground sections. These include applications for homology modeling, ligand or protein-protein docking, molecular mechanics or dynamics simulations, electrostatics and in silico drug design. MUSC investigators have access to core facilities to run their own experiments and are assisted by core staff concerning experimental design; data interpretation and technical information to best utilize facilities and instrumentation. The core falls into eight basic components: Nephrology Proteomics Laboratory The Nephrology Proteomics Laboratory is a state-of-the-art facility capable of separation and identification of proteins in tissue, cells and body fluids. The major interest of our laboratory is biomarker discovery and pathophysiology of renal diseases. The MUSC nephrology proteomics lab has purchased a state-of-the-art mass spectrometer. The ABSciex Triple ToF mass spectrometer has brought exciting new capabilities to the lab for biomarker identification because of its extremely high mass accuracy and sensitivity. The mass spectrometer has been used to identify novel biomarkers that predict the development and progression of both diabetic nephropathy and acute kidney injury. NMR spectroscopy is a powerful technique that can provide detailed information on the three-dimensional structure of biological molecules in solution. A NanoBay Avance III , equipped with a 5 mm dual resonance, broadband inverse probe with an actively shielded single-axis gradient. The current configuration allows operation in a two-channel setup. The spectrometer facilitates operations in a four-channel setup and is equipped with a CASE sample changer for automated analysis of up to 24 samples. The spectrometer facilitates operations in a five-channel setup and is equipped with a CASE sample changer for automated analysis of up to 24 samples. The facility offers access to state-of-the-art instrumentation and expert assistance in designing NMR experiments and applications. We offer several animal models, including a xenograft tumor model, 4NQO oral cancer model, periodontitis model, and oral mucositis model. Services include injection of tumor cells, 4NQO delivery, animal health monitoring, and imaging of tumor progression in vivo , oral injections, animal irradiation, and animal dissection and tissue collection. Collectively, these systems can be used for high- or low-resolution expression profiling, expression panel screening, genotyping, metagenomics, etc. The facility provides free consultation to help investigators develop effective strategies and experimental designs, whether for funded or proposed projects. Instrumentation for service work: Affymetrix Microarray System including GeneChip scanner, hybridization oven and two fluidics workstations. Ion Torrent PGM System for next-generation sequencing Agilent Bioanalyzer BluePippin for high resolution agarose gel fragment isolation Instrumentation available for investigator use: The Core supports a standardized experience and quantitative measurement of behavior and function; core services include motion capture and electromyography for precise measures of motion and

muscle activity, energetics as measured by oxygen consumption, accelerometer-based devices for measuring activities such as walking and hemi paretic arm use, neuromuscular measures of strength and power of individual joints, clinical measures, and animal behavioral assay equipment. This equipment is the industry standard for measuring cellular bioenergetics, simultaneously measuring the two major energy producing pathways of the cell â€" mitochondrial respiration and glycolysis - in a microplate, in real-time. This fast and sensitive measurement of cellular bioenergetics is label free, enabling time-resolved analysis and the reuse of the cells. XF assays provide increased throughput in a drug discovery format that is superior to its single parameter predecessors. The library will allow access to multiple shRNAs for a single gene, which is important for validation against off target effects. This technology holds tremendous power, and is ready to help investigators at MUSC work toward breakthrough discoveries. The Small Animal Imaging Unit provides state-of-the-art instrumentation enabling noninvasive anatomical, metabolic, and functional imaging. In vivo fluorescence and bioluminescence imaging is also used to evaluate tumor metabolism and cell biology in response to genetic manipulations, pharmacologic agents, and cancer chemotherapy drugs. This unit has experience in in vivo imaging of brain, colon, lung, head and neck cancers as well as multiple other tumor types. The Small Animal Imaging Unit supports the following equipment: The facility is supported by an X-ray Manager, who is responsible for maintaining the diffraction equipment and assisting users with X-ray data collection and structure determinations, and a Systems Manager for the computing resources. It includes three components: X-ray diffraction, crystallization and molecular graphics. In an adjoining room, the crystallization facility contains two large incubators and a stereomicroscope for setting up and monitoring crystallization experiments. Another adjoining room contains four small-scale incubators to test a wide range of temperatures in crystallization.

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## 3: Personnel Requirements -- CLIA

*Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.*

History[ edit ] Researcher at work at a National Energy Technology Laboratory facility NETL originated from a series of predecessor organizations that began over years ago. In , the U. The Pittsburgh Experiment Station began coal-to-liquids conversion research in the mids, soon after several European countries had begun to pursue research in coal-based synthetic fuels. Just eight years later in Bartlesville, Oklahoma, the Bureau of Mines opened the Petroleum Experiment Station to pursue systematic application of engineering and scientific methods to oil drilling, helping the oil industry create operating and safety standards. The Station joined with two other nearby DOI groups to create the Appalachian Experiment Station for onsite coal research at the current Morgantown location in  The Centers began overseeing federally funded contracts for fossil energy research and development. The Centers housed onsite research in coal, oil, and gas technologies and managed contracts for research and development conducted by universities, industry, and other research institutions. NETL opened the Arctic Energy Office in Fairbanks, Alaska, in to promote research, development, and deployment of 1 oil recovery, gas-to-liquids, and natural gas production and transportation and 2 electric power in Arctic climates, including fossil, wind, geothermal, fuel cells, and small hydroelectric facilities. In , the Center was named an historical landmark by the American Society for Metals. Today, researchers here address fundamental mechanisms and processes; melt, cast, and fabricate up to one ton of materials; completely characterize the chemical and physical properties of materials; and deal with the waste and byproducts of materials processes. These partnerships bring like-minded organizations together to develop energy solutions. Carbon Capture Simulation Initiative[ edit ] The Carbon Capture Simulation Initiative CCSI partners national laboratories, industry, and academic institutions to develop and deploy computational modeling and simulation tools that accelerate carbon capture technologies from discovery to widespread future deployment on hundreds of power plants. The CCSI Toolset provides industry end users with a comprehensive, integrated suite of scientifically validated models and software to assist them with uncertainty quantification, optimization, risk analysis, and decision-making capabilities necessary to advance energy technology. To assist in effective site characterization, selection, operation, and management, NRAP is considering potential risks associated with key operational concerns, as well as those associated with long-term liabilities, such as groundwater protection and storage permanence. NRAP is developing a method for quantifying risk profiles of multiple types of carbon dioxide storage sites to guide decision making and risk management. NRAP is also developing monitoring and mitigation protocols to reduce uncertainty in the predicted long-term behavior of a site. Regional Carbon Sequestration Partnerships[ edit ] In , DOE awarded cooperative agreements to seven Regional Carbon Sequestration Partnerships RCSPs because geographical differences in fossil fuel use and geologic storage opportunities across North America dictate regional approaches to capture and storage of CO2 and other greenhouse gases. Each RCSP has developed a regional carbon management plan to identify the most suitable storage strategies and technologies, aid in regulatory development, and propose appropriate infrastructure for carbon capture and storage commercialization within their respective regions to safely and permanently store CO2. NETL manages the partnership and the projects. The RCSPs comprise more than organizations covering 43 states and four Canadian provinces and include representatives from state and local agencies, regional universities, national laboratories, non-government organizations, foreign government agencies, engineering and research firms, electric utilities, oil and gas companies, and other industrial partners. The following are the seven RCSPs. Onsite research, development, and demonstration address key energy and environmental concerns and solve issues that slow commercialization of domestic fuel power systems, fossil-fuel resource development, and environmental

mitigation and waste management technologies. NETL works with modeling and theoretical research as well as bench- to demonstration-scale development and demonstration of technologies and concepts. The resulting work has garnered numerous licensable patents and awards. Coal[ edit ] NETL addresses critical research and development challenges for near-zero emissions power production from coal. The aim is to improve on CO2 capture and storage techniques, and to develop advanced energy systems, as well as sensing and advanced process controls. Key aspects of this research include improving overall system thermal efficiency, reducing capital and operating costs, and enabling affordable CO2 capture. Final technical, environmental, and financial challenges associated with new advanced coal technologies are overcome during full-scale testing so the technologies are ready for commercial deployment. The demonstrated technologies fall under four CO2 capture pathways, each followed by CO2 storage: Oil and Gas[ edit ] NETL helps advance development of technologies supporting efficient, environmentally benign unconventional domestic oil and gas resources. The program foci are on deepwater technology, enhanced oil recovery , and methane hydrate. Because oil and natural gas resources are becoming increasingly harder to locate and produce, new technologies are required to extract them. In addition, NETL supports administration of the Clean Cities Program, which increases the use of alternative fuels for transportation by building coalitions of state and local governments, private industry, non-profit organizations, and fleet managers.

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## 4: Search FLC Business | Federal Labs

*Directory of federal laboratory & technology resources: A guide to services, facilities, and expertise (Volume 2) [Anonymous] on www.enganchecubano.com *FREE* shipping on qualifying offers.*

This subpart addresses qualifications and responsibilities for provider performed microscopy PPM , moderate complexity, and high complexity laboratories. Laboratories performing only waived testing do not have specific personnel qualifications. PPM classification has requirements for the laboratory director and testing personnel. Moderate complexity classification has requirements for the laboratory director, clinical consultant, technical consultant, and testing personnel. High complexity classification has requirements for the laboratory director, clinical consultant, technical supervisor, general supervisor, and testing personnel. Requirements for a Moderate Complexity Lab A moderate complexity laboratory is required to have personnel who meet the following qualifications in most situations, the laboratory director is qualified to full multiple roles: Laboratory Director Must possess a current license as a laboratory director issued by the state in which the laboratory is located, if such licensing is required. AND Be a doctor of medicine or osteopathy licensed to practice medicine or osteopathy in the state in which the laboratory is located and be certified in anatomic, clinical pathology, or both by the American Board of Pathology or the American Osteopathic Board of Pathology, or possess qualifications that are equivalent. OR Be a doctor of medicine or osteopathy or doctor of podiatric medicine licensed to practice medicine or osteopathy or podiatry in the state in which the laboratory is located and have laboratory training or experience consisting of: At least one year of directing or supervising non-waived laboratory testing, or Have at least 20 continuing medical education credit hours, commensurate with the director responsibilities, or Have laboratory training equivalent to twenty continuing medical education credit hours, commensurate with the director responsibilities, obtained during medical residency. OR Hold an earned doctoral degree in a chemical, physical, biological, or clinical laboratory science from an accredited institution and: Have at least one year of laboratory training or experience or both in non-waived testing, and In addition, have at least one year of supervisory laboratory experience in non-waived testing. Have at least two years of laboratory training or experience or both in non-waived, and In addition, have a least two years of supervisory laboratory experience in non-waived testing. OR Be serving as a laboratory director and must have previously qualified or could have qualified as a laboratory director on or before February 28,  OR Qualified under state law to direct a laboratory in the state in which the laboratory is located on or before February 28,  Technical Consultant The laboratory must have a technical consultant qualified by education and either training or experience to provide technical consultation for each of the specialties and subspecialties tested in the laboratory. Possess a current license issued by the state in which the laboratory is located, if such licensing is required. OR Be a doctor of medicine, osteopathy, or doctor of podiatric medicine licensed to practice medicine, osteopathy, or podiatry in the state in which the laboratory is located, and have at least one year of laboratory training or experience or both in non-waived testing, in the designated specialty or subspecialty areas of service for which the technical consultant is responsible. Be qualified as the laboratory director. OR Be a doctor of medicine, osteopathy, or podiatric medicine and possess a license to practice medicine, osteopathy, or podiatry in the state in which the laboratory is located. Testing Personnel The laboratory must have a sufficient number of individuals who meet the qualifications to perform the volume and complexity of tests performed. OR Have earned an associate degree in a chemical, physical, or biological science or medical laboratory technology from an accredited institution. OR Be a high school graduate or equivalent and have successfully completed an official military medical laboratory procedures course of at least 50 weeks duration, and have held the military enlisted occupational specialty of Medical Laboratory Specialist Laboratory Technician. OR Have earned a high school diploma or equivalent, and have documentation of training appropriate for the testing performed prior to analyzing patient specimens. Such training must ensure that the individual has: The skills required for proper specimen collection, including

patient preparation, if applicable, labeling, handling, preservation or fixation, processing or preparation, transportation and storage of specimens, and The skills required for implementing all standard laboratory procedures, and The skills required for performing each test method and for proper instrument use, and The skills required for performing preventive maintenance, troubleshooting, and calibration procedures related to each test performed, and A working knowledge of reagent stability and storage, and The skills required to implement quality control policies and procedures of the laboratory, and An awareness of the factors that influence test results, and the skills required to assess and verify the validity of patient test results through the evaluation of quality control sample values prior to reporting patient test results.

## 5: About the FLC | Federal Labs

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## 6: Office Directory

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## 7: Laboratories Overview | FHWA

*Directory of federal laboratory & technology resources: a guide to services, facilities, and expertise / prepared by the Center for the Utilization of Federal Technology, U.S. Dept. of Commerce, National Technical Information Service.*

## 8: About the FLC | Federal Labs

*Designed to bridge the communication gap between the Federal Laboratory Consortium (FLC) and public and private sectors of the country, this directory has been prepared as a compilation of scientific and technical research and development activities at federal laboratories, which are directing.*

## 9: Catalog Record: Directory of federal laboratory & technology | Hathi Trust Digital Library

*Intended to assist both the private and public sectors to locate and utilize technological expertise within the federal laboratories, this directory lists the federal laboratories and centers that are affiliated with the Federal Laboratory Consortium and describes the area of technological expertise.*

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