

**Facilities and Equipment
Center for Biomedical Engineering
University of New Mexico**

July 20, 2009

Laboratory

The UNM Center for Biomedical Engineering operates a contiguous 15,000 sq. ft. laboratory suite in UNM's new Centennial Engineering Center (opened September 2008). Designed in accordance with best practices of industrial and large academic labs, the CBME lab features a common area of lab benches, flanked by enclosed rooms in which large and/or sensitive equipment is located. Within the common lab area are 6 fume hoods, 9 sinks, a large number of cabinets, and 22 lab benches each ~20 feet in length.

Special facilities and equipment in this **main lab** are the following:

(i) apparatus and materials for **biomaterials engineering and surface analysis**, including flow cytometry, ellipsometry, tensiometer, contact angle goniometry, circular dichroism spectrophotometry, surface plasmon resonance spectroscopy, UV/Vis spectroscopy, and various commercial and custom-built fluorescence spectroscopy; the CEC also houses a Zeiss LSM 510 confocal scanning laser microscope; 2 fluorescence microscopes; and electrophoresis equipment, including a Beckman Pace 5000 capillary electrophoresis instrument.

(ii) apparatus and materials for **cell and tissue engineering**, including laminar flow hoods, shakers, incubators, centrifuges, sonicators, cryogenic refrigerator, walk-in cold room, walk-in warm room, a BioSafety Level 2 room, Milipore ultrapure water systems, autoclaves, thermocycler, optical tweezers, hemocytometers, stereomicroscope, and conventional microscopes; researchers using the tissue culture facility are able to perform a wide range of standard mammalian tissue culture procedures;

(iii) apparatus and materials for **biosensors engineering** including metal evaporator, soft lithography processing station (with photoresist spin coater, Piranha etch, bake oven, UV exposure lamp, wet station and UV mask aligner), high-precision mill, Biodot computer-controlled spotting system, knife plotter, fluorescence microscope and stereo microscope; thin film engineering and characterization;

(iv) apparatus and materials for **biochemical engineering** including a complete set of organic and bioorganic synthesis equipment and fume hoods, probe sonicator, absorption spectrophotometer, high-pressure liquid chromatograph, and Langmuir trough, a horizontal biomaterials deposition trough, chemostats, instron, and protein adsorption apparatus; and

(v) an **optics** laboratory (~300 sq.ft.) that contains several optics tables, optomechanics, and optics.

In addition to the main 15,000 sq. ft. lab are: (i) the Keck Nanofluidics Laboratory with a full suite of equipment for nano and microfluidics engineering; and (ii) the CBME North Labs, offering a full suite of equipment for bacteria culture and manipulation.

Office

CBME houses an office suite containing 4300 sq. ft. This area is divided between faculty, staff and students. Faculty and staff have approximately 125 sq. ft. offices. Post-doctoral research scientists and graduate students have shared offices.

Computer

Each lab room has a common-use computer open to all, along with those required to run specialized equipment. Individual researchers and support staff have state of the art computers equipped with basic writing and data analysis software. Advanced software for special applications (image analysis, equipment monitoring and control) are provided as needed.