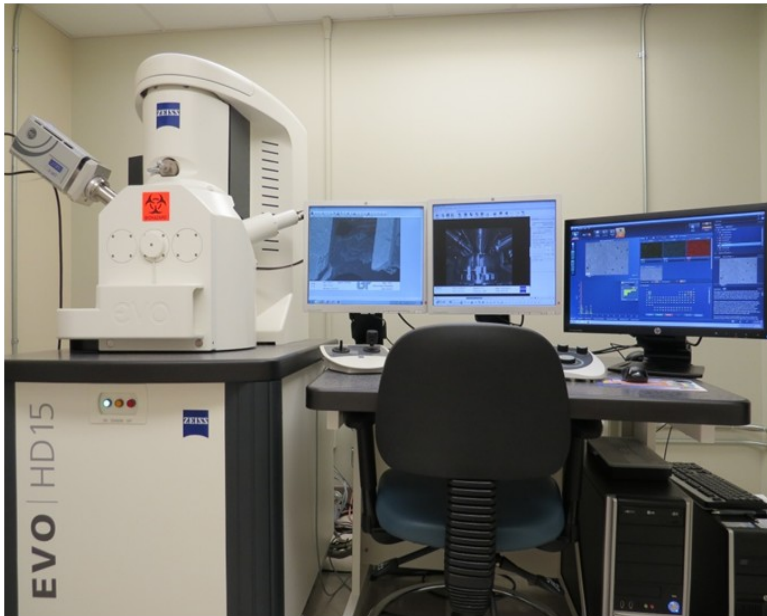




THE UNIVERSITY of
TENNESSEE 
HEALTH SCIENCE CENTER



CATALOGUE *of*
EQUIPMENT & RESOURCES

Equipment and resources available for dental research on the
University of Tennessee Health Science Center campus in Memphis, Tennessee



The College of Dentistry at the University of Tennessee has six designated dental research centers on the Health Science Center campus, located in Memphis.

Biomaterials Research Center

Bioscience Research Center

Stem Cell Research Center

Clinical Research Center

Craniofacial Research Center

TMD/Sleep Disorder Clinic

Each of these centers is fully-equipped with state-of-the-art equipment and technologies. Every center is set with computers and internet access.

These laboratories and equipment allow for a variety of research projects, including but not limited to biomaterials development, product trials and analysis, proteomic analysis, molecular assays, craniofacial pain - treatment and therapy testing, and tissue regeneration.



In addition to the resources specific to the College of Dentistry, the University of Tennessee Health Science Center also offers a variety of campus-wide research resources, including:

Laboratory Animal Care Unit

Drosophila Core

Flow Cytometry and Cell Sorting Facility

Genomics and Bioinformatics Cores

Imtek MicroCat/SPECT System

University of Memphis Integrated Microscopy Center

Laser Capture Microdissection

Mass Spectrometry Core Laboratory

Molecular Resource Center

Neuroscience Imaging



These facilities, and specialized personnel, are available to assist faculty conducting research at the University of Tennessee Health Science Center.





EQUIPMENT *in the* COLLEGE of DENTISTRY RESEARCH CENTERS

The following section lists the equipment that is available at each of the dental research centers on campus.



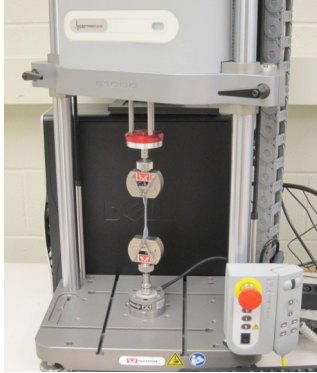


Director of Biomaterials:
Dr. Antheunis Versluis



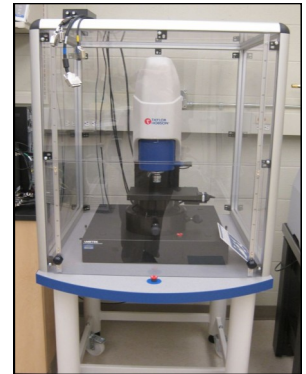
Biomaterials Research Center
N102 Dunn Dental Building | 875 Union Avenue

The Biomaterials Research Center specializes in finite element stress analysis, shrinkage testing, wear/erosion measurement and analysis, 3D optical scanning, and cusp flexure and tooth deformation measurement, as well as various other biomaterials and clinical testing. The following equipment is available for use in the Biomaterials Research Center.

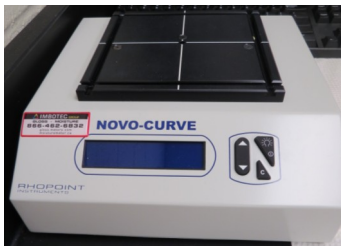


Instron E1000—Static & Fatigue

- Analytical Balance
- Finite Element Analysis
- Mobile dental hand-piece station
- Nano Indenter
- Optical Scanner (Comet xS): Graphics processing station
- pH meter
- Polishing Machine
- Scanning electron microscope (SEM)
- Stereo Microscope: CCD camera & image analysis software
- Strain Gauge Measurement Set-up
- Total Shrinkage Measurement
- Ultrasonic Cleaner

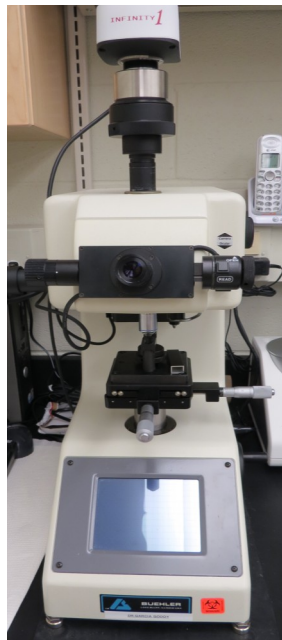


Taylor Hobson CCI MP Automated Optical



Novo Cure—Gloss Measure

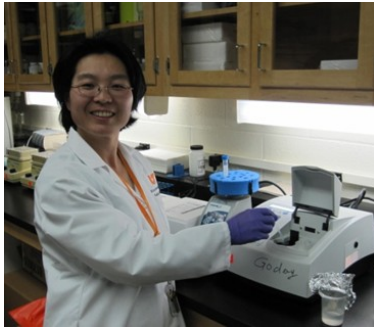
Zeiss A1 Microscope



Buehler Hardness Tester (Vickers & Knoop)

Biomaterials Research Coordinator
Brian Morrow





Dr. Yanhui
Zhang,
Assistant
Professor,
Department
of
Bioscience



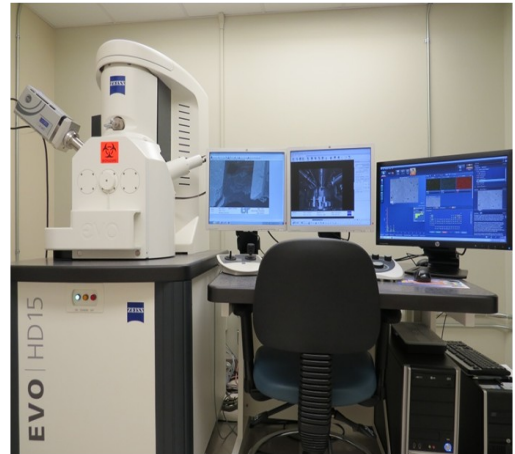
Bioscience Research Center

N102 Dental Building | 875 Union Avenue

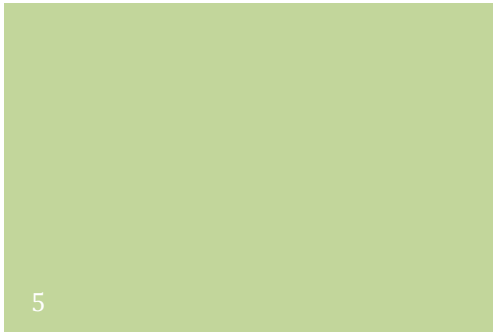
Center Director: Dr. Franklin Garcia-Godoy

The Bioscience Research Center specializes in remineralization and demineralization, in vivo cytotoxicity and biocompatibility, plaque glycolysis, and osteogenesis and chondrogenesis of dental stem cells. The following is a list of equipment available for use in the Bioscience Research Center.

- Actis 5 MicroCT (with computer control and separate construction unit)
- Accu-Jet® Pro-Pipette Controller
- Apparatus to standardize cavity preparations
- Beckman-Coulter pH meter (model pHi 510 with electrodes)
- Bio-Rad Power Pac 300 Power Supplier
- Bio-Rad Sub-Cell® GT Agarose Gel Electrophoresis Systems
- Buekler Hardness Tester (Vickers and Knoop)
- Color Spectrometer
- Gilson Pipettor (0.2-2 µl; 2-20 µl; 20-200 µl; 200-1000 µl)
- Eppendorf Benchtop Centrifuge 5415
- Eppendorf Repeater-Plus Pipette
- Eppendorf Spectrometer
- Eppendorf Thermomixers
- Instron Universal Testing Machine
- Micro-Specimen Former for micro-shear bond strength
- MJ Research PTC-200 Thermocycler
- Olympus Polarized Microscope
- Olympus Dissecting Microscope
- Single Unit Toothbrushing Machine
- Staining Device
- Taylor Hard Tissue Microtome
- VG Studio Max 3D Visualization SW on MacPro
- VWR Pulse-Chasing Vortexer (with different tube holders)
- VWR Thermomixers (model 5436)
- V8 Toothbrushing Machine



Carl Zeiss EVO LS15 Scanning
Electron Microscope (SEM)



PerkinElmer Light—Plate Reader



Bio-Rad ChemiDoc MP
Imaging System

**Director for Stem Cells and
Regenerative Therapies,
Department of Bioscience
Research: Dr. George Huang**



**Stem Cell Research Center | 225 Cancer Research
Center | 19 South Manassas Street**

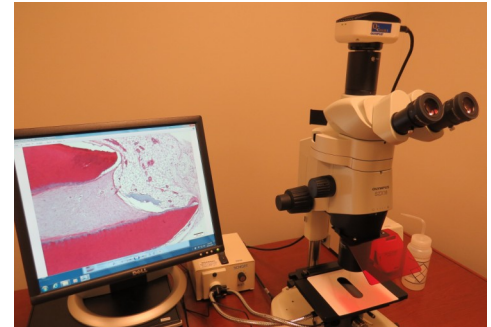
The Stem Cell and Regenerative Therapies Research Center is part of the interdisciplinary basic translational cancer research that is being conducted by College of Dentistry, College of Medicine, and the College of Pharmacy. Current research in the Stem Cells and Regenerative Therapies Research Center consists of neurotrophins and nerve cell survival and injury, and dental stem cell use for Parkinson's and other neuroscience diseases.

- -80°C Freezer
- -20°C Freezer
- 4°C Refrigerator
- Analytical Balance
- Anesthesia Machine (for small animals)
- Class II Biosafety Cabinet
- Cryostat
- Electrophoresis Equipment
- Gel Imaging System (with computer)
- Heating Block
- Isotemp Incubator for Bacterial Plates
- IR CO₂ Incubator
- Leitz Compound Microscope
- Microcentrifuge
- Olympus SZX16—3-Dimensional Dissection Microscope (with video camera)
- Nikon Fluorescent Microscope (imaging camera & computer)
- pH Meter
- Polytron Homogenizer
- Refrigerated Microcentrifuge
- Thermocycler
- Thermomixer
- Tissue Culture Centrifuge
- Top Load Balance
- Cortexer
- Western Blot Equipment

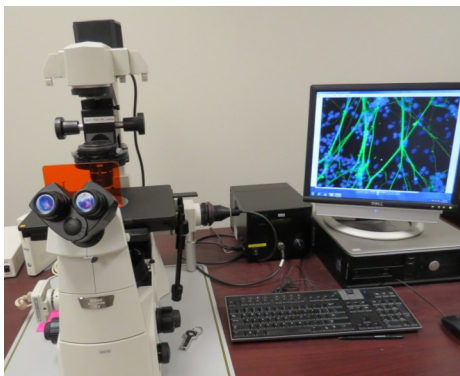
Applied
Biosystems
Veriti 96
Well
Thermal
Cycler



Olympus Q
SZX15—
Dimensional
Microscope



Nikon Eclipse
Ti
Fluorescence
Microscope





Clinical Research Center | 3rd Floor, Dental Building | 875 Union Ave
Center Director Dr. Franklin Garcia-Godoy

The Clinical Research Center* is an area designated specifically for clinical research and oral product testing. Recent studies include mouth rinse and dentifrice effects on plaque glycolysis, vital teeth whitening, and oral epidemiological studies. The following is a list of equipment available for use in the Clinical Research Center. Associates in the Clinical Research Center are available to assist on projects in a variety of ways, including subject recruitment, conducting dental exams and prophylaxis, and project logistics (i.e., purchasing, product management).

- 4 private, fully-equipped dental units
- Computers and printers
- Oratec BANA-Zyme Processor
- Polymer Cheek Retractors (frosted and unfrosted)
- Private consultation area
- Private work station with 4 computers (for sponsor representatives, etc.)
- Vita Classical A1-D4 shade guides
- Radiography



Operator with radiography capabilities.

Clinical Research Center Hygienist, Colette Stewart, examines a research subject in the center.





Craniofacial Research Center | 429 Boling Center
711 Jefferson Avenue



The Craniofacial Research Center has equipment for basic laboratory research studies. Equipment is available for microbiological, molecular biological, and biochemical research, among many other basic science procedures and studies. The following equipment is available for use in the Craniofacial Research Center.

Cell Culture Research Equipment:

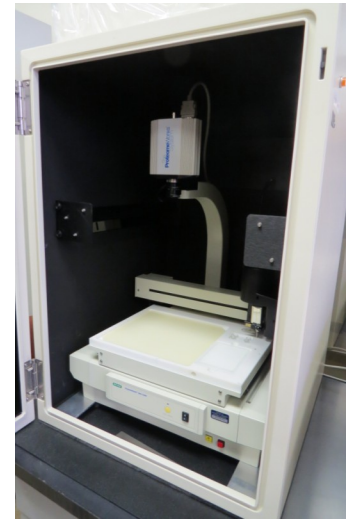
- Biological Safety Cabinets
- Inverted stage microscopes
- Low-temperature (-150°C) storage for cells
- Low-temperature (-80°C) for temperature-sensitive biological materials
- Water-jacketed air/CO₂ incubators

General Analytical Equipment:

- HPLC chromatographic system -ultraviolet, visible, fluorescence detectors
- Microcentrifuges
- Millipore water deionizer
- pH Meters
- Photometer for chemiluminescent assays
- Scanning and fixed wavelength ultraviolet and visible spectrometers
- Vertical and horizontal gel electrophoresis cells and power supplies

Immunochemical Analysis:

- Electrophoretic transfer unites for Western blot analysis
- ELISA microplate spectrophotometer
- Microplate fluorescence reader



Proteome Works Spot Cutter



Spectro Star Nano BMG Labtech

Microbiology Equipment:

- Automated microbial colony counter
- Biological safety equipment
- Containers for culture of anaerobic bacteria
- Environmental and water-bath incubator-shakers
- Environmental incubators
- Microscopes
- Water-jacketed air/CO₂ incubator

Microscopy:

- Cytocentrifuge



Microscopy:

- Cytocentrifuge

Preparative Equipment:

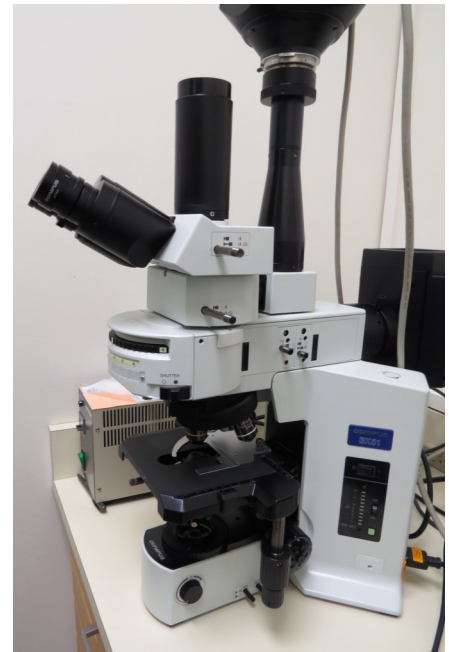
- Amicon ultrafiltration cells
- Centrifugal evaporator
- Cold room
- Fume hood
- High-and low-speed centrifuges
- Homogenizers
- Lyophilizers (freeze-driers)
- Preparative scale chromatography system
- Sonicator

Proteomic Analysis:

- Fluorescent gel scanner -system for c spot-matching, densitometry, statistical analysis
- Robotic spot cutter
- Rotofor preparative electrophoresis cell
- SELDI-TOF mass spectrometer
- Two-dimensional isoelectric focusing and gel electrophoresis system
- Ultraviolet light box

Radiochemical Analysis:

- Liquid scintillation spectrometer



Olympus BX51 —Fluorescent Microscope



Spectra Max Gemini UV Scanner



Nuaire Biological Tissue Culture Hoods

