Bone and Body Composition Core

Douglas Maish

Purdue University, maish@purdue.edu

Purdue University Office of Research and Partnerships

Follow this and additional works at: http://docs.lib.purdue.edu/ovprcores

Recommended Citation

http://docs.lib.purdue.edu/ovprcores/2

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.
The Bone and Body Composition Core provides services and methods for determining bone density, bone geometry, and body composition in humans and animals. The following equipment and services are available to Purdue researchers along with Indiana CTSI members:

- **A GE/Lunar iDXA (Dual Energy X-ray Absorptiometry) (for humans).** Provides scans of the whole body, lumbar spine, femur neck, and forearm. Results are given as bone mineral content, areal bone mineral density, comparative scores, and grams of fat, lean, and bone tissues.
- **A Stratek XCT 2000, peripheral quantitative computed tomography (pQCT) (for Humans).** Used primarily for forearms and lower legs. Also has been used to measure excised porcine femurs. Results are given as total bone area and volumetric density; cortical bone thickness, area, volumetric density and moment of inertia measurements; cortical and subcortical bone area and volumetric density; trabecular bone area and volume density; periosteal and endosteal circumference; polar stress-strain index (SSI); and muscle and fat areas.
- **A GE/Lunar Prodigy DXA (for animals).** Provides whole body scans for small and medium sized animals, and specific bone scans for larger animals. Results are given as bone mineral content, areal bone mineral density, comparative scores, and grams of fat, lean, and bone tissues.
- **The Scanco MicroCT u40.** Provides 3D imaging as well as quantitative measurements. Samples must be smaller than 35 mm in diameter and 75 mm in length. Results are given as total bone area and volumetric density; cortical bone thickness, area, volumetric density and moment of inertia measurements; cortical and subcortical area and volumetric density; trabecular bone area and volumetric density; periosteal and endosteal circumference; polar SSI; and imaging of arteries.
- **Histology Services** are located at IUPUI, Indianapolis. Dr. Burr and staff from the Department of Anatomy and Cell Biology at the Indiana University School of Medicine provide histological services for basic science (non-clinical) research. Both mineralized (plastic embedded) and soft tissue (paraffin embedded) specimens can be prepared.

The faculty directors (Dr. Connie Weaver (weavercm@purdue.edu), Dr. Kathleen Hill Gallant (hillgallant@purdue.edu), and Dr. David Burr (dburr@iupui.edu) are available as needed for consultation.

**Authors:** Douglas Maish and Purdue University Office of Research and Partnerships

**Keywords:** boilerplate, grant, body composition, bone composition, bone density, bone geometry, DXA, dual energy x-ray absorptiometry, pQCT, peripheral quantitative computed tomography, microCT, histology