Standard Operating Procedures:

MicroCT Core Facility –NYU College of Dentistry

Instrument: Bruker SKYSCAN 1172

Access: Investigators can learn about the core and order analysis by going to our web page http://dental.nyu.edu/research/cores/micro-ct.html. For detailed inquiries investigators should contact mCT-core operator, Ms Ripa Chowdhury via email (stated on the web site).

Prioritization: We provide fee-for-service according to the availability of the instrument. Should the instrument be utilized heavily, priority is given to researchers who have deadlines such as proposal submission. Reservations can be cancelled at any time. Users needing large blocks of time are encouraged to reserve overnight slots. The following user policies are continuously evaluated by the Research Core Director and at the quarterly meetings of the Advisory Committee and revised if necessary.

Quality assurance: The Core tests calcified samples or contrast stained samples provided by the investigator. Samples are handed to the Core operator and stored under appropriate conditions (Room temperature, 4C, or -20C) until analyzed. All accepted samples are recorded in the Core notebooks. Analytical quality control is maintained by daily standardization of the instruments. We follow the manufacturer’s recommendations for each instrument.

Forms have also been constructed to keep track of the specific parameters used for each investigator. The forms are signed and dated by the Core manager and kept in a ring binder in the Core.

The following information is available for each scanned sample: sample ID (internal number), date of service, service provided, time start, time finish, total time, cost/fee, electronic signature, date billed, and comments (provides details related to the service such as type of samples run, number of samples, instrument parameters and/or reconstruction parameters). At the end of each month the time log is itemized with respect to PI and sent to the department administrator for billing.

Costs: Investigators are charged at the same rate according to a fee structure reviewed and updated annually to ensure that the surplus or deficit in the Core account does not exceed operating costs. Usage Fees for specimen analyses are based on the time the instrument is used. The fees are clearly stated on the web site and investigators are given an approximate fee for service prior to any imaging, analysis or training.

Data storage: Raw data of scans is backed up on an online server at the end of each month for 7 years. Investigators can pull up old data at any time. All investigators sign a form once reconstructed data has been transferred in order to avoid potential confusion at later dates.

10 easy steps for using the mCT core:

1. Contact microCT operator by email or phone
2. Schedule consultation
3. Complete order form in person or before meeting via web page
4. Discuss research project, scanning expectations, imaging parameters, and deadlines.
5. Approve a form for estimated charges for the requested service (can be done via email).
6. Following approval the scans are scheduled and an estimated time of completion is provided to the PI.
7. Following completion of scans, the raw data is transferred from the scan station to a work station using a hard drive.
8. Raw data is then reconstructed using NRecon software with reconstruction parameters (determined by the operator), which are recorded and kept in the core notebooks for future reference.
9. Once the data is reconstructed, an email is sent to the investigator to pick up the data.
10. The investigator signs off in the log sheet.

microCT services such as analysis, 3D model constructions, or training, are also available for scheduling. These services are also charged ($75 per hour); charges will be discussed prior to scheduling.

Training takes usually 2 hours; additional help required is provided free of charge;

3D model construction takes ½-1 hour; time varies depending on quantity of samples