Requests for Destructive Analysis of Skeletal Remains from the TXSTDSC

Human skeletal remains from the Texas State Donated Skeletal Collection (TXSTDSC) represent invaluable resources for research in forensic anthropology, clinical research, medicine, paleopathology, bioarchaeology, and related disciplines.

Given the finite nature of these remains, the request to perform destructive analyses on the TXSTDSC must be weighed with consideration of the research proposed against the fact that destructive analysis permanently alters or consumes collection materials.

These guidelines are designed to establish that destructive testing has been thoughtfully considered by the researcher, prioritizing preservation of the TXSTDSC and maximizing the scientific yield from each sample.

By adhering to these guidelines, researchers will ensure that their request for destructive analysis of skeletal and dental materials is justified, minimally invasive, and ethically conducted. These points must be addressed by any researcher requesting to perform destructive analysis of materials from the TXSTDSC. Please limit this justification document to 3-5 pages.

1. Necessity and Justification:

- Provide a detailed justification for the need for destructive analysis, including why non-destructive methods cannot suffice.
- Address how the proposed research promises advancements in understanding, which cannot be achieved without such analysis.
- Address why other non-TXSTDSC samples would not suffice (i.e., extracted teeth, CT images, animal bone analogues, previously collected data, etc.).

2. Literature Review and Precedent:

- Conduct a review of current literature to ensure that the proposed research provides new insights and is not redundant or largely exploratory.
- Reference previous cases where destructive analysis yielded substantial information to support this request.

3. Minimal Impact Strategy:

- Outline steps to minimize the volume and number of samples used. Techniques such as micro-sampling or the use of smaller test areas should be considered and prioritized.
- Whenever possible, portions of the sample that are less integral to the skeletal structure, such as fragmented or already damaged parts, should be prioritized for testing.

4. Alternative Techniques Assessment:

- Document other viable non-destructive techniques prior to proposing destructive methods. This might include imaging techniques (e.g., X-ray, CT scanning), surface scanning, or chemical residue analysis.
- Justify why not using these alternatives is scientifically appropriate, detailing the limitations encountered with non-destructive methods.

5. Conservation and Documentation:

- Outline the steps that will be taken to ensure comprehensive documentation of the sample pre-, during, and post-analysis, including high-resolution photographs, casts, detailed descriptions, and digital 3D models that will be created before any sample alteration.

6. Recovery and Restoration:

- Include a plan for the recovery of outputs, residues, or fragments resulting from destructive tests.
- If feasible, restoration of the sample to a condition as close to the original as possible should be planned and detailed in the proposal.

7. Sharing Results and Open Science:

- Explain how the results from destructive testing will be made available to the broader scientific community to maximize the benefits derived from the loss of material.
- Explain your plan for publishing findings in accepted journals (including open-access sources), proposed conference presentations, and researcher-accessible databases.