



Consultation Guidelines for Research Design and Statistical Analyses University of Texas Health Science Center at Houston, School of Dentistry

Goals - Provide support for faculty, fellows and students in experimental design and statistical analyses to aid in proposal preparations, manuscript submissions, thesis projects, and overall research.

Services – Consultation is available for all stages of the scientific process, including:

- (1) Formulating questions and hypotheses,
- (2) Developing research plan, experimental design, and data management,
- (3) Applying statistics and data analyses,
- (4) Interpreting data analyses and drawing conclusions,
- (5) Communicating results and research findings.

Faculty, fellows and students should develop their research questions and are strongly encouraged to meet with Dr. Holland during the planning phases of their research (i.e., prior to data collection, proposal submission) in order to:

- (1) best define study population(s) and appropriate unit of replication,
- (2) determine suitable controls, sample sizes, and replication design,
- (3) avoid lack of independence among units of replication,
- (4) avoid confounding effects of other variables,
- (5) best organize and manage data (e.g., replicates are rows, variables are columns).

Types of Service Requests (and needed information for those requests)

1. Research plan, experimental design and data management:

- A. Questions/hypotheses, including response and explanatory variables.
- B. Proposed research design (e.g., observational, repeated measures, randomized block, etc.).
- C. Proposed data sheet with column headings for response and explanatory variables.
- D. Sample size or power calculations (require some estimated measure of variance).

2. Statistics and Data Analyses:

- A. All information in 1A-C for hypotheses and research/experimental design.
- B. Final data file with each variable in separate column.

3. Results interpretation and conclusions

4. Proposal Submission (Research/Statistical Design)

5. Manuscript Preparation (statistical write-up, figures, tables, etc.)

6. Other statistical and research design requests.

Submission of Service Request - Email PDF request form to Julian.N.Holland@uth.tmc.edu that includes:

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| 1. Name | 5. Advisor/mentor (if applicable) |
| 2. Title/Affiliation/Dept | 6. Actual date needed (not preferred date) |
| 3. Email | 7. Statistical Service Request (1, 2, 3, 4, 5 or 6 and brief description) |
| 4. Phone | 8. How will analyses be used (e.g., proposal, manuscript, thesis) |