

Stat 684



Statistical Collaboration – The Process

Professional Internship



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Consulting

✓ PRINCIPLES

1

Statistics vs. Statistical Science

2

Art vs Science

3

Consultant vs. Collaborator

TEAMS

✓ ASSIGNMENTS

1

Blubaugh, Joseph Bottcher, Jason Lee Edeh, Ejike John
Marshall, Kyle Edward Pang, Bo Yagur, Nataly

2

Dasgupta, Prasad Ranjan Ghadfa, Soufiane Hodges, Jacob Cordell
Nitroy, Shannon Schneider, Gregory Shelton, Alison Rachelle

3

Bullard, Jacob Lyle Johnson, Michael David Sedarous, Anthony G.
Sloane, Zachary Ward, Lisa M Wu, Shang-Chieh

4

Austin, Thomas Michael Berkheimer, Sarah C. Cifuentes, Michael
Dhillon, Dilsher Singh Lin, Meng Phanthalack, Davis Lee

TEAMS

✓ ASSIGNMENT & PROBLEMS

1

Mon. 6:30-8:00 CST

2

Tues. 6:30-8:00 CST

3

Wed. 6:30-8:00 CST

4

Thu. 6:30-8:00 CST

Collaboration

✓ PRODUCT

1

Technical Report

2

Final Deliverable

3

Format – 5 Sections

Technical Report

✓ FIVE SECTIONS

1

Research Goals and Objectives

2

Data Collection

3

Statistical Methods

4

Statistical Analysis

5

Research Summary & Interpretation

Syllabus

✓ SEMESTER SCHEDULE (approximate)

Weeks	Dates	Topics	Assignment
1-2	1/18 & 1/28	Discussion of the five step consulting process	Reading and Discussion Participation
3-4	1/30-2/11	Problem Description	<i>Section I: Problem Description</i>
5-6	2/13-2/25	Statistical Methods	<i>Section II: Statistical Method</i>
7-8	2/27-3/11	Statistical Analysis	<i>Section III: Statistical Analysis</i>
9-10	3/13-3/25	Interpretation & Discussion	<i>Section IV: Interpretation</i>
11	3/27-4/1	Summary & Recommendations	<i>Section V: Summary</i>
12-13	4/3-4/15	Project Presentations	<i>Final Presentation of Project Report to Client</i>

Section 1

✓ RESEARCH GOALS & OBJECTIVES

1

Objectives: What are the key research or business objectives?

2

Be Skeptical: Does the client have preconceived beliefs?

3

Bias: Who is funding this work and why?

4

Population: What is the target population for this research?

5

Deadlines: What are the project deadlines and milestones?

Section 2

✓ DATA COLLECTION

1

Approach: Is this a designed experiment or retrospective study?

2

Key Outcomes: Are the key outcomes identified? If so, what are they?

3

Key Outcomes: If they are not identified, what has to happen to get identified?

4

Randomization: How is randomization being used (random effects)?

5

Treatments: What are the treatments or factors (fixed effects)?

Section 3

✓ STATISTICAL METHODS

1

Design: Describe the experimental design or sampling methodology.

2

Overall Methodology: For the design, what type of model are you proposing to use.

3

Outliers and Imputations: Describe how you are you handing outliers and missing values

4

Key Outcomes: Conduct a power analysis for the most important outcomes.

5

Sample Size: Recommendations and Justification

Section 4

✓ STATISTICAL ANALYSIS

1

Descriptive Statistics

2

Outliers and Imputation

3

Estimated Models

4

Statistical Significance

Section 5

✓ SUMMARY & INTERPRETATION

1

Executive Summary

2

Discuss Statistical Significance vs Practical Significance

3

Research Conclusions & Their Support

4

Recommendations

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Statistical Collaboration Assignment Week 2

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Week 2

✓ Assignment

1

Review background material, as appropriate.

2

Before your Team Meeting, Prepare 5 Questions for your Client

3

Submit your questions via email to your team facilitator (myself or Richard) at least 3 hours before your Team Meeting.