

# Florida State University Statistical Consulting Center Annual Report

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2015-2016

## Overview

The Statistical Consulting Center at Florida State University is a research assistance facility for the students, faculty, and staff at FSU. The Center is a function of the graduate program within the Department of Statistics at Florida State University. The Statistical Consulting Center provides free service for members of the FSU community. Upon request, clients from outside the FSU community are given at least a one-hour consultation. The Statistical Consulting Center also holds walk-in hours to assist clients on a first-come first-serve basis. Services included but are not limited to:

- Translating research questions and hypotheses into statistical terms
- Designing sampling procedures
- Choosing appropriate statistical methods
- Interpreting computer output
- Phrasing statistical results
- Referrals to other statistical help
- Assistance learning various statistical packages
- Aid in data formatting, uploading, etc.
- The Statistical Consulting Center does not perform actual analyses.

Walk-in hours for the 2015-2016 academic year were held on Monday-Thursday afternoons in Strozier Library Consultation Room A. Additional appointments were planned to accommodate both the consultant's and the clients' specific scheduling needs. The majority of appointments were held in person during walk-in hours. Occasionally the consultant would answer questions via email or have a skype appointment if the client was not in town.

## Summary of Business Activities

Graduate students Quisheng Chen, Jiwon Lee, Hanning Li, Jinchan Qu, Yang Yu, Qiaoya Zhang served as the consultants for the consulting center this year. On average, consultants had 2 appointments each week, for a total of about 40-50 appointments over the course of the two semesters. As a novel practice in Spring 2016, 6 pairs of graduate student volunteers have taken 9 appointments outside regular walk-in hours.

The demand was relatively consistent across the months, with slight increases at the beginning and end of the semester, and close to important dates such as submission deadlines for research proposals or dissertations.

## Consulting Appointments and Walk-ins

The majority of clients this year were graduate students seeking assistance for the quantitative aspect of their research/dissertations. Quite a few undergraduate students came in requesting tutoring, the majority of who were referenced to the Statistics Department in order to find a proper tutor. There was a fairly even split between appointments scheduled and walk-in clients between the semesters. The most frequent statistical ideas used were t-tests, ANOVA, basic linear regression, logistic regression, Chi-square, factor analysis, sample size calculations, and survey data analysis. To make better use of time, we encouraged clients to provide a detail summary of their problem prior to meeting, especially if the appointment is outside the regular walk-in hours. But it often worked out better when they describe the problem during the meeting. The majority of programs clients came in with little knowledge of their statistical software, which included SAS, SPSS, R, and excel. With

SPSS being one of the main software used by clients, consultants quickly learned how to use and interpret the software and its output.

Over time, we are proud to say that we have been able to provide statistical services for clients from various departments of the University community as indicated below:

Departments:

Anthropology  
Art Education  
Biology  
Business  
Chemistry  
Communication Disorders  
Criminal Justice  
Dance  
Education  
Educational Psychology and Learning Systems Department  
Engineering Exercise Science  
Family and Child Sciences Family and Consumer Sciences Fashion Design  
FSU Libraries  
General Education  
Geography  
Instructional Systems  
Internal Affairs  
Mathematics Education  
Meteorology  
Modern Languages  
Music  
Music Therapy  
Nursing  
Nutrition/ Exercise Science  
Oceanography  
Physics  
Psychology  
Public Administration  
Retail Merchandising  
Social Work  
Sociology

## Sports Management

## Statistics

## SUS

## Typical Cases

One student from the Economics department would like to give a presentation about his internship. He provided a big dataset including 30 teams' 10-year NBA games, where 24 explanatory variables were collected. He had done some data cleaning, but he lacked experience in modeling. He was helped with modeling, explanation of the R-squared of fitted model and interpreting model result.

A faculty librarian was assessing the “statistical capacity” of national statistics offices. He had questions about how to get a representative sample for his assessment. We assisted with providing similar examples about stratified sampling that is similar to his case. He was also provided a tutoring video on how to program the sampling process using SPSS.

A student from School of Music requested help on her thesis, which was about processing the qualitative data from some one-time surveys with Likert-scale questions in a cross-sectional study. The interest of this research is to tell the influencing factors on nursing students' perception of music therapy in mental health. The client was provided help with cleaning and summarizing the data in an excel file, and suggestions about running models in R studio was also offered. She was later referred to the tutoring services in the Department of Statistics.

An undergraduate student had difficulty selecting models to fit some data, which was from a control study on the effectiveness of a new treatment on patients' heart rates. The data was longitudinal at the same time. The client was suggested to perform statistical analysis in excel, which she was familiar with and already started with. To ensure a better understanding from the client's view, suggestions on extracting data by different factors before performing ANOVA were offered. The client had a following consulting after the first time, after she got the final results. Some confusion about understanding the results was clarified.

One graduate student from the Marriage and Family Therapy program requested an appointment via skype on her thesis concerning survey data. A multiple linear regression is suggested, however, many of the survey questions are highly correlated. She was given advices on how to aggregate similar answers to the question to an ensemble score.

A Ph.D. student from the Modern Languages Department had finished writing her dissertation manuscript with t-test and linear regression experiments. She came in with her manuscript to confirm that everything she writes was statistically accurate. Assistance was provided specifically on the interpretation on significance level and p values.

## Reflections

Working in the Statistical Consulting Center has been a very interesting and effective way to prepare graduate students from the Statistics Department for consulting-based careers, practice interdisciplinary collaboration, and apply knowledge gained from the department. It has been a great way to see how statistical methods are applied to a variety of situations and helping clients succeed in their research and dissertations is very rewarding. It also is a great way to continue gaining knowledge that isn't taught in the statistics department.

Our consultants would like to sincerely thank the faculty and staff in the FSU Department of Statistics, especially Dr. Steven Ramsier, for continued guidance and support of the consulting center.