Introduction for Faculty Colleagues

Course
MTH 112- General Statistics which is used by many students to satisfy the first-year core. These students are from a variety of majors and may not be quantitatively advanced.

Assignment Fit into Course
This assignment will be used through the regression unit. It is a case-study/model-eliciting assignment geared towards application in context.

Aims for Assignment
The aim of the assignment is for students to apply statistics in real-world contexts and to use it as evidence to support their conclusions.

Course Learning Outcomes
- Consume: Use statistical results appropriately to make life and academic decisions
- Create: Create models and compute appropriate measures to assist in decision making
- Communicate: Create an oral or written report on the results of a statistical study and interpret for those who have little or no statistical background

Specific Learning Outcome
As a result of working on this assignment the student will be able to generate and analyze appropriate regression statistics in order to draw conclusions. Students will also be able to present their findings in writing and orally to a non-statistical audience.

Important Features of the Assignment
There are 4 parts to this assignment but I’ll address only 3 parts here:

1. Reading Readiness/Media Article Reflection: The purpose of the media article and the readiness questions is to introduce the students to the context of the problem
2. Problem Statement Sheet: The in-class portion is done in groups of 3-5; data is provided on the day of the activity.

3. Post-MEA Assignment: This is a non-graded reflective component that students complete after the group assignment and classroom discussion.

**Modifications Made**

1. Reading Readiness Assignment
   - I didn’t make any modifications here. It wasn’t clear to me whether I needed to state the purpose of the assignment at this point.

2. Problem Statement
   - I updated the main assignment prompt to include a statement on the purpose/goal of the assignment.
   - The stated prompt/statements of task has been completely redone as I attempt to articulate the requirements for the letter (number of words; non-statistical audience). I also included language so it was clear that the students are to work in their usual task groups.
   - After feedback from my group I updated the presentation rubric: defining professional manner, use of visual aids and cohesiveness of presentation.
   - I also updated the portion of the poster presentation to be more explicit in terms of expectations.

3. Post-activity Reflection
   - No modifications were made to the reflection.

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**The Assignment I Distribute to Students**

MTH 112 – General Statistics

Racial Profiling

**Part I**

Racial Profiling
Reading Readiness
Read the two “Reading Readiness” Articles located on the Moodle site under “In-Class Assignments.” After reading, answer the following questions and bring your completed sheet and copies of the article to our next class.

Reading Readiness Questions
1. What is racial profiling?

2. Consider the first article about New York. Write at least 8 sentences expressing your opinion of the article as it relates to race issues—be sure to discuss personal, economic, and social impact if appropriate.

3. What are your thoughts about the findings from the second article about Jacksonville? Should other law enforcement agencies strive for this record? Why or why not?

Part II
Is Driving While Black (DWB) an Issue?

Purpose
The purpose of this assignment is to get you to apply regression analysis to a real-life situation in order to make decisions.

Problem Statement
A local citizen claims that he was targeted by local law enforcement agents simply because he was black. He believes that his rights were infringed upon and that he should not have been stopped since he was not speeding or breaking any laws. According to the local citizen, his greatest crime was driving while black.

According to the law enforcement officer, the citizen was acting suspiciously. Supporters of the law enforcement agency claim that the officer was well-within his/her right to pull over anyone who they consider to be suspicious. Opponents state that racial profiling is never acceptable and can lead to vigilante citizens and an overall feeling of distrust between the black and white communities.

Your Task
You have been hired by a local Sheriff to investigate whether there is evidence of increased racial profiling in his area. The data set Race.xlsx located in the in-class lab assignments folder on Moodle contains information on traffic stops based on race. Please use your usual assignment and task groups.

In your MEA group, you will work for the next 1 hour to analyze the data to see whether or not the local sheriff (Mr. BigHat) should consider further investigations into the citizens’ allegations.
Write a letter addressed to the Local Sheriff of no more than 250-words. The letter should:

- State the purpose of your letter with your position clearly stated in the opening paragraph
- Present a supported argument as to why the Sheriff should or should not consider further investigations into the citizen’s claim being sure to include the reasoning that led to your decision
- Provide at least one recommendation of how the Sheriff may use these results to inform the wider non-statistical community of these findings
- Remember that when writing for a non-statistical audience you should not use statistical jargon such as mean (instead use average for example) and p-value (simply discuss statistical significance in general terms). Instead use and present only values and terms that are understandable to a large audience.
- Conventional letter style is expected.

(Distributed at the end of the class) For our next-class you will

1. Work with your group to create a poster presentation of your model/findings (be sure to collect materials before you leave) to be presented to our class who we will assume are all familiar with statistics 😊:
   - The presentation will be no more than 7 minutes in length & each member of the team must speak
   - Do include the relevant statistics that you used to reach the decision argued in your letter (again assume that we know statistics)

2. Individually complete the post-MEA handout that can be found on the Moodle site under “In-class Assignments”

Part III
Racial Profiling!

Consider the discussion and final conclusions you drew with your classmates based on the Race data set. Please answer the following questions in preparation for an extension of the race problem next class.
Reflection Questions
1. Was there anything in your findings that was surprising or different from what you would have expected from a statistical standpoint?

2. Compared to your thoughts on racial-profiling that you documented with the reading readiness articles, have any of your opinions changed or been confirmed based on your data analysis?

3. Are there considerations that you can think of that the Sheriff should be aware of that your group did not report in your final write-up? Be sure to explain why these are important considerations.

Racial Profiling Rubric

Needs of the Client: Does the solution meet the needs of the client?

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<thead>
<tr>
<th>Score</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>The product is on the wrong track. Working longer or harder won’t work.</td>
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<tr>
<td>2</td>
<td>The product is a good start toward meeting the client’s needs, but a lot more work is needed to respond to all of the issues.</td>
</tr>
<tr>
<td>3</td>
<td>The product is nearly ready to be used. It still needs a few small modifications, additions, or refinements.</td>
</tr>
<tr>
<td>4</td>
<td>No changes will be needed to meet the immediate needs of the client.</td>
</tr>
<tr>
<td>5</td>
<td>The tool not only works for the immediate situation, but it also would be easy for others to modify and use it in similar situations.</td>
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Letter: Does the letter completely explain the procedure used to arrive at the solution?

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<tr>
<th>Score</th>
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<tr>
<td>1</td>
<td>The letter describes very little of the solution process.</td>
</tr>
<tr>
<td>2</td>
<td>The letter only describes the solution process generally. The client would be unable to implement the solution process simply from the information provided in the letter. The client would need clarification, more information, or help.</td>
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<tr>
<td>3</td>
<td>The letter provides enough detail that the client could implement the procedure with only minor clarification.</td>
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<tr>
<td>4</td>
<td>The letter provides enough detail for the client to implement the suggested solution without additions or clarification.</td>
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The letter provides enough detail for the client to implement the suggested solution, and it includes information about how to alter the solution for different but similar circumstances.

Presentation: Was the information shared in a professional manner and communicated clearly?

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<tr>
<td>1</td>
<td>The presenters were unprepared for the presentation. The presentation was unorganized, unprofessional, and contained no use of visual aids. All group members did not participate.</td>
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<tr>
<td>2</td>
<td>The presentation was vague and/or unorganized and contained minimal visual aids. The audience only partially understood the solution process. All group members did not participate.</td>
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<tr>
<td>3</td>
<td>The presentation was conducted in a professional manner: emerging use of language and terminology &amp; clear succinct compelling tone. The audience understood most of the solution process and appropriate visual aids were used. Little clarification was needed and all group members participated.</td>
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<td>4</td>
<td>The presentation was conducted in a professional manner: appropriate use of language and terminology, &amp; clear succinct compelling tone. The audience understood the solution process. Presentation was well planned and organized, complete, and appropriate visual aids were used. All group members participated in the presentation.</td>
</tr>
<tr>
<td>5</td>
<td>The presentation was conducted in a professional and engaging manner. The audience clearly understood the solution process and could relate it to other similar situations. The presentation was well planned, organized, and all group members participated to form a cohesive presentation, and visual aids were used.</td>
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