Introduction for Faculty Colleagues

- This short assignment, a case study, is intended for General Statistics (MTH 110) at Elon University.

- This assignment has student process data collected from actual malpractice suits. Students need to describe and analyze the data effectively. They need to decide and justify which statistical measures and analyses are most appropriate for this task. This assignment is making them consumers of data.

- The important features of the assignment are that the data is real and students are asked to write in a different genre than they would normally do in a statistics class. The audience was also intentionally chosen so that students need to write in a non-technical manner. This will help verify they understand the underlying concepts to their calculations.

Connections to Course Goals

- Create models and compute appropriate measures to assist in decision-making.

- Create an oral or written report on the results of a statistical study and interpret for those who have little or no statistical background

Learning Objectives

The objective of this case study is to use vocabulary (relating to descriptive measures), analysis techniques, and technology learned in Chapters 3 and 4 of your textbook. You will use these skills to interpret and analyze an actual data set that relates to malpractice medical lawsuits.
The Assignment I Distribute to Students

MTH 110 – General Statistics
Medical Malpractice

Read the following case study.

MEDICAL MALPRACTICE- SHOW ME THE MONEY!!!!
According to a recent study published in the US News and World Report, the cost of medical malpractice in the United States is $55.6 billion a year, which is 2.4 percent of annual healthcare spending. Another 2011 study published in the New England Journal of Medicine revealed that annually, during the period of 1991 to 2005, 7.4% of all physicians licensed in the US had a malpractice claim.

These staggering numbers not only contribute to the high cost of health care, but the size of successful malpractice claims also contributes to high premiums for medical malpractice insurance.

You are an employee at LACHEL Insurance Company. The CEO of LACHEL wants to raise insurance premiums for older claimants because she thinks the malpractice suits are costing insurance companies more money. You need to decide if the CEO is justified in raising the cost of premiums using a statistical analysis technique, at least three different descriptive measures, and one labeled graph. You must write a letter to the CEO (who has a minimal understanding of statistics) that will either support or not support her decision to increase premiums.

In order to write your letter, you collected data from 108 medical malpractice lawsuits. The data you collected provides the gender and age of each claimant, the specialty of the doctor that was sued, and the cost of the lawsuit to the insurance company. The data is available at:

Medical_Malpractice.xlsx

Process
Your letter should be typed, 2-3 pages in length (not including graphs), and in correct letter format. The pages should be double spaced with .5 margins. You must provide all numerical summaries. You may use any software that you prefer. The letter is due on October 21. All papers must be stapled. Late papers will receive a 10% deduction.

Criteria
1. Appropriateness of descriptive measures (For example, the mean was appropriately chosen as the measure of center for analysis)

2. Correctness of descriptive measures (For example, the mean was calculated correctly)
3. Inclusion of at least 3 descriptive measures
4. Inclusion of at least 1 graph
5. Appropriateness of graph
6. Correctness of graph
7. Appropriateness of analysis
8. Thoroughness of analysis
9. Written to proper audience
10. Quality of Writing (Purposeful, organized, and persuasive)
11. Spelling and Grammar
<table>
<thead>
<tr>
<th>Case Study Rubric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Descriptive Measures</strong></td>
</tr>
<tr>
<td>0-6 points</td>
</tr>
</tbody>
</table>

| **Graph** |
| 0-6 points | The graph was appropriate with correct numerical scales and correct descriptive labels. | The graph was appropriate but either the scales or descriptive label was not fully correct. | The graph was appropriate but either the scales or descriptive label was completely incorrect. | The graph was not appropriate. |

| **Analysis** |
| 0-6 points | The analysis was appropriate and your answer to the CEO was fully justified. | The analysis was appropriate but some details of your argument are lacking. | The analysis was appropriate but the argument was poor in nature. | The analysis was not appropriate. |

| **Audience** |
| 0-3 points | The entire letter Appropriate to the audience. | There is 1 error in regards to audience. | There are 2 errors in regards to audience. | There are 3 or more errors in regards to audience. |

| **Quality of Writing** |
| 0-6 points | Articulation is excellent. | Articulation is good. | Articulation is fair. | Articulation is poor. |

| **Spelling/Grammar** |
| 0-3 points | No errors | 1 error | 2 errors | 3 or more errors |