**Guided Workshop 5: Fitting Experimental Data to the Gamma Distribution**

Instructions: Download the file “Guided Workshop 5 – STARTER.xlsx”. I would recommend setting aside about an hour for this activity. When you are ready to start the workshop, open and begin the video “Guided Workshop 5: Fitting Experimental Data to a Gamma Distribution”.

The video will have optional in-video questions to help teach you and guide you along. You won’t submit this document, but it will be a good template/guide for the activity.

At the end, after you have completed the Excel file above, you will open the “Guided Workshop 5 Submission” quiz, where you will enter the answers to the questions at the end of this document.

Background/Objective

Oftentimes, there arises a need to fit experimental univariate data to a probability distribution. In this workshop, you will first confirm that the data is non-normally distributed. Then, you will create a histogram and fit the experimental data (particle sizes) to a Gamma distribution. Finally, you will use your fitted model to estimate probabilities associated with the model distribution.

When you are done putting together your Excel file, answer the following questions in the “Guided Workshop 5 Submission Quiz” on Coursera (the text fields below are only for your benefit – you won’t be submitting this document).

1. What is the theoretical probability for the bin centered at 3.6? Note that this is BEFORE running the Solver tool (if you forget, you can always just replace alpha = 3 and beta = 2 in your Excel worksheet). Click here to enter text.
2. What is the residual for the bin centered at 3.6? Click here to enter text.
3. What is the value for SSE? Click here to enter text.
4. Based on your model, what is the proportion of particles that are greater than 4? (This is also the probability that any single particle is bigger than 4.) Click here to enter text.
5. Based on your model, what is the proportion of particles that are greater than 1 but smaller than 3? Click here to enter text.

**That’s all! 😊**