

## Prospectus

### My Prospectus Proposal:

#### 1. Title

GGPlot analysis of morphological effects of paraquat and rotenone exposure on the zebrafish model, to determine both the individual and combined effects.

#### 2. Research question(s)

Is the ocular distance of zebrafish negatively affected by exposure to rotenone, paraquat, or a combination of rotenone and paraquat? Is the length of zebrafish negatively affected by exposure to rotenone, paraquat, or a combination of rotenone and paraquat?

#### 3. Objective(s)

The goals are to explain the methods and code used for designing a functional code to visualize various parameters of zebrafish exposed to paraquat, rotenone, and a combination of paraquat and rotenone.

#### 4. Approach

I will be using various sources, including Geeks for Geeks and Wickham's R for Data Science, to develop a functional code for creating plots of the data collected.

#### 5. Selected References

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<https://www.geeksforgeeks.org/plot-mean-and-standard-deviation-using-ggplot2-in-r/>

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<https://r4ds.hadley.nz/>

Holtz, Y. (n.d.-b). *Data visualization with R and GGPlot2: The R Graph Gallery*. Data

visualization with R and ggplot2 | the R Graph Gallery. <https://r-graph-gallery.com/ggplot2-package.html>

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Robea, M.-A., Strungaru, Ștefan-A., Lenzi, C., Nicoară, M., & Ciobică, A. (2018). (PDF) the

importance of rotenone in generating neurological and psychiatric features in zebrafish-relevance for a parkinson's disease model.

[https://www.researchgate.net/publication/325618749\\_The\\_Importance\\_of\\_Rotene\\_in\\_Generating\\_Neurological\\_and\\_Psychiatric\\_Features\\_in\\_Zebrafish-Relevance\\_for\\_a\\_Parkinson's\\_Disease\\_Model](https://www.researchgate.net/publication/325618749_The_Importance_of_Rotene_in_Generating_Neurological_and_Psychiatric_Features_in_Zebrafish-Relevance_for_a_Parkinson's_Disease_Model)

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Nicoara, M. (2020). Parkinson's Disease-Induced Zebrafish Models: Focusing on Oxidative Stress Implications and Sleep Processes. *Oxidative Medicine and Cellular Longevity*, 2020, 1–15. <https://doi.org/10.1155/2020/1370837>