

## **Understanding Differences in Research Grant Funding: To Who, For What and How are Funds Allocated?**

### **Background:**

Obtaining research funding is a critical step for groups pursuing experiments and tests in the medical field. The NIH is a group of national biomedical agencies that work together to provide research funding for different projects globally. Although the NIH provides over 25% of funding for research projects nationwide, the total funding awarded to different specializations, demographics, and research methods tends to vary significantly across groups.

### **The Challenge:**

Data is an extremely powerful tool in understanding trends that exist in the world around us. Fortunately for us, the NIH provides an expansive database on the research projects that it has funded. By analyzing the different research projects that are accepted across specific disciplines or other groups, you will determine whether certain treatment types or medical problems are given priority or bias when receiving funding.

### **Objective:**

The general goal of the project is to identify a potential inequality in research funding and use analysis methods (keyword search, LDA, TF-IDF) to search through the massive database of NIH Funding Abstracts and determine whether this inequality is substantial. Generally, a hypothesis test of whether the difference in funding amounts is statistically significant will serve as a benchmark for identifying a legitimate trend in the data. The specific inequality investigated is up to you as the data scientist!

### **Deliverable:**

By the end of the project, you will be able to produce a comprehensive report that details:

- A specific source or prevalent trend of inequality in research funding
- Statistical evidence that the difference in funding is significant
- Offer potential reasons for these funding differences and potential effects/solutions to this conclusion

### **Impact:**

This project has legitimate implications for those interested in obtaining research funding from the NIH. By understanding the projects that do receive funding, individuals can better prepare their own proposals for success. This can influence the direction of medical research in future years. Also, by illuminating the inequalities within research funding, you provide important information to future scientists about what diseases need increased funding and which are possibly overcrowded with researchers.