# Checkpoint 2 Findings

How do settlements and disciplinary action relate to police behavior and career? We want to explore both settlements and disciplinary action because they are multiple ways of acknowledging wrong-doing by the police. Furthermore, visualizations can help us compare different misconducts that lead to settlements or disciplinary actions. With many different misconduct categories, from false arrest, to use of force, to lockup procedures, it can easily become overwhelming to compare these different misconduct categories without visualizations.

To find all the information below, we created SQL queries and imported the data as CSV files. From there, we used Tableau to create visualizations from CSV files. While Tableau could normally work by connecting with the AWS server, we were unable to have a quick and consistent connection, if we even held a connection at all. This was even with changing our version of PostgreSQL and drivers. Thus to save time, we swapped to working locally. Once past this barrier, Tableau was rather intuitive with its drag-and-drop interface. One flaw would be that it works with the aggregate of our data values when creating a scatter plot. Removing this assumption, the scatter plot doesn't just provide a single data point (the sum of a field) by default but all the values of a field. Overall, Tableau is challenging due to its connection issues and default aggregation of values but otherwise leads to the quick production of visuals and flexibility towards experimentation when worked locally.

1. How much settlement costs do officers grouped by their common allegation cause?

Settlement Costs of Officers Grouped by Most Common Allegation
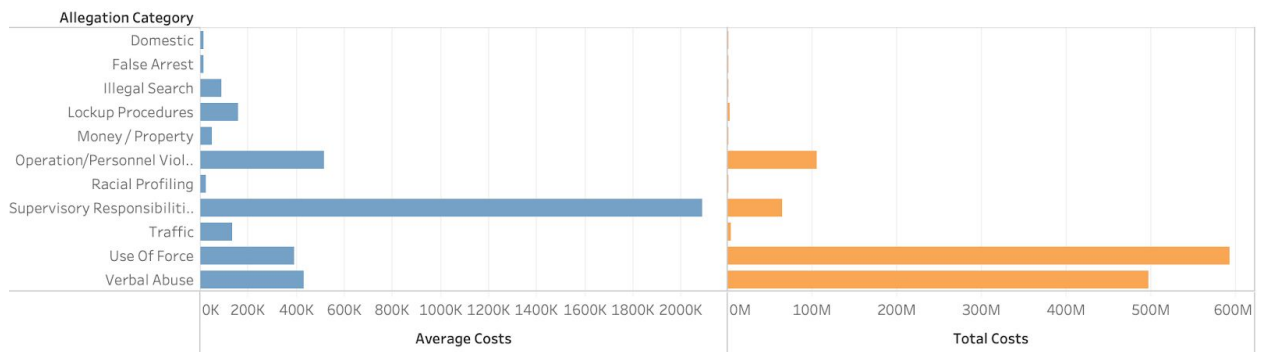
We created two bar charts that look at the average and total costs of officers groups by their most common allegations. By this, we mean that based on the allegations placed in data_officer_allegations, we could divide officers into groups according to what allegation category they were reported the most with. From there this was connected to the lawsuit data to find each group's settlement payments based on the officers of each group. In this case, we can observe that in terms of the total cost the officers who have a complaint history in the use of force and verbal abuse then constitute the largest portions of total costs. But we need to take into account it may be likely verbal abuse and use of force may be more common than other categories, which is why we have the graph with average costs. Here it can be seen that while the use of force and verbal abuse is still costly per person, it's not comparable to the far larger average cost for Supervisor Responsibility. From this, we can learn that while the use of force and verbal abuse is the most costly overall, in terms of person, supervisor responsibility is far more

impactful in settlements. By looking at this graph, we can see which allegations that officers receive may impact the future expenditure that the department has on them. From this, we can further explore if there are any additional consequences or attributes towards officers that have accusations of supervisor responsibility, use of force, and verbal abuse compared to other less costly groups.

2. How does rank influence discipline? Are there any ranks more likely than others to be disciplined?

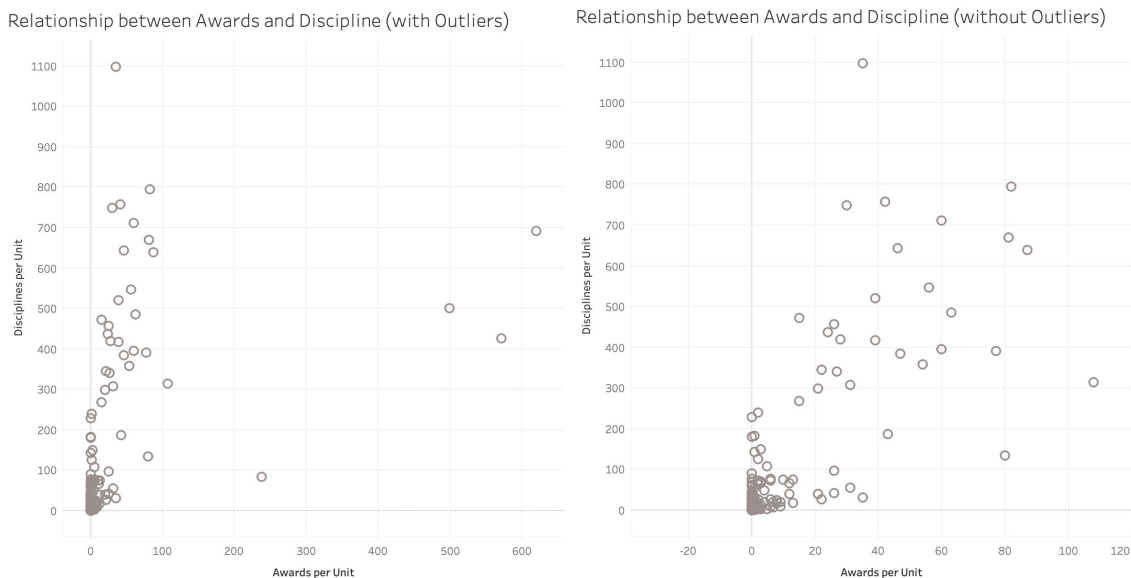### Discipline Averages per Rank
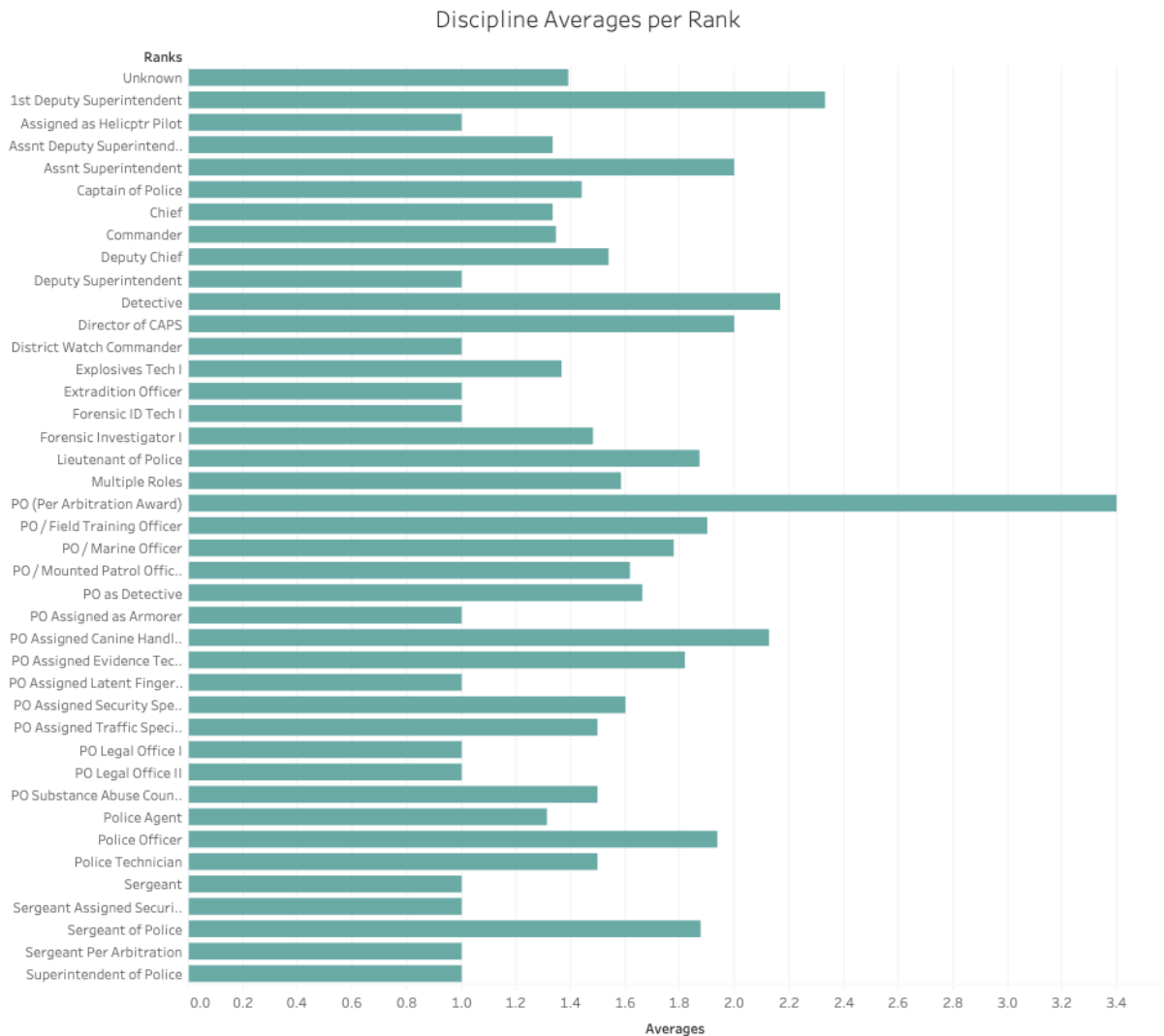
Since we want to explore the relationship between an officer's career to discipline and settlements, we looked through all the ranks and the average discipline put towards each rank.

One caveat is that several police officers play multiple roles in the department. To shorten the names, instead of "Police Officer" we may use "PO" instead. The most standout feature in this graph is police officers per arbitration award which have a notable average of 3.4 disciplines for every office in the rank. This may not be surprising though, since an arbitration award is provided towards officers as a quicker alternative to having to go through a court of law. In other words, it would be surprising for a cop to have this award provided to them without having a complaint that would lead up to a legal situation where a cop needs such an award. Otherwise, ranks of interest would be the ranks of first deputy superintendent, canine handler, detective, and assistant superintendent. This implies that the roles of leadership may have some impact on how many complaints an officer gets. This aspect is also notable when noticing that lieutenants, sergeants, and field training officers have comparable averages to police officers despite being a smaller portion of the police force. We can look at this more deeply like looking at percentiles/distributions per rank so that we can see if there is a notable clustering of "bad cops" in one given rank over the other and move beyond just averages.

3. A scatter plot can show the number of awards (x-axis) vs. number of disciplines (y-axis) per unit.

Relationship between Awards and Discipline (with Outliers)

Relationship between Awards and Discipline (without Outliers)

Lastly, we want to see how career success (in this case in awards) can impact the chances of an officer being disciplined. For this chart, we grouped the officers by units for simplicity. On the left, we have the scatterplot with all the data in place. While on the right-hand chart, we ignored Units 255, 620, 11, and 80 which were visible outliers in the left chart. Through both charts, it can be seen that there is a slight positive relationship between awards and discipline. Also, it can be noted that in the right-hand chart there is an increased spreading of points the further upper right the points are. This brings up the question if there is a third variable at work in these high-award, high-discipline areas. It could be that these units take proper law enforcement seriously enough that disciplinary action is just more likely. It could be that these units may view a more radical methodology that the community disapproves of as a positive. But it could also be that these units are bigger or work in more dangerous situations leading to differing perspectives on these units' bravery and anxiety-inducing presence. Once again, we see another relationship that surprised us.