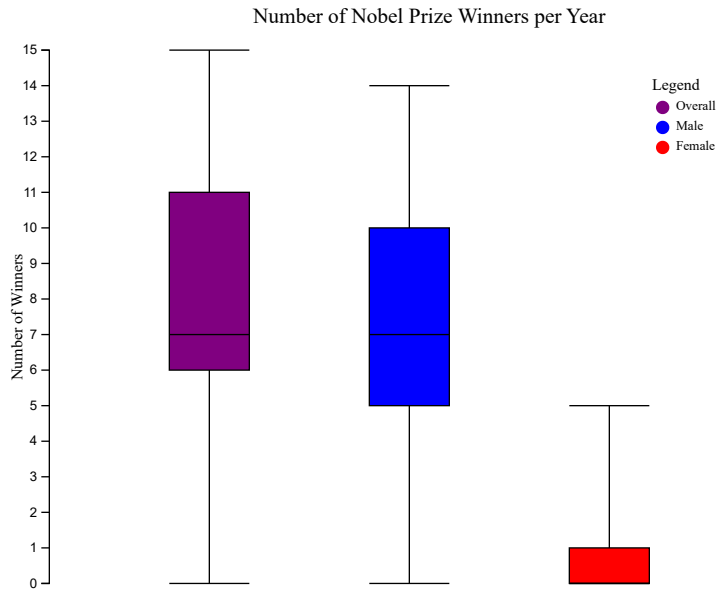


Nobel Prize Trends

Introduction

Alfred Nobel was a Swedish scientist and industrialist; he was most well-known for inventing dynamite. When he died in 1896, he bequeathed all his assets to be used for the establishment of five prizes in the fields of Physics, Chemistry, Physiology (now known as Medicine), Literature, and Peace. The first Nobel prizes were awarded in 1901 and a sixth prize for Economics was added in 1968. While the process of deciding a winner differs slightly for each category, a large chunk of the decision-making happens within the Nobel Committee. This dashboard explores various trends among Nobel prize winners, especially surrounding the number of winners over time, the gender of the winners, and the countries that the winners are from. This dashboard utilizes data spanning from 1901 to 2022.

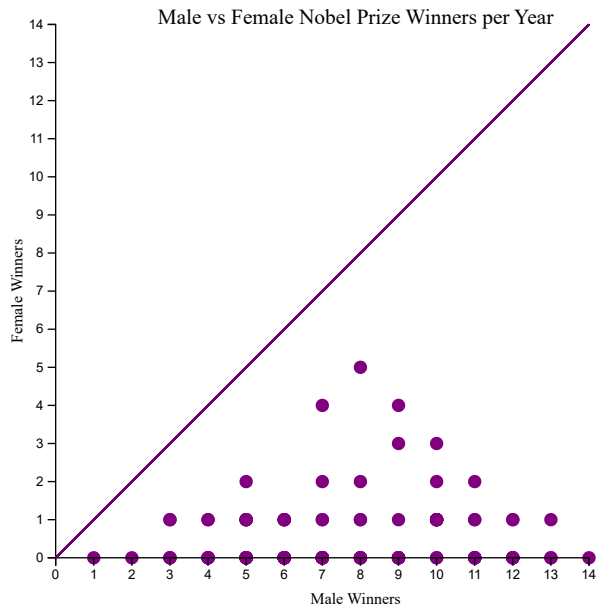


Number of Nobel Prize Winners per Year:

How much variation has there been in the number of Nobel Prize winners per year?

The box plot makes it clear that there is not much difference between the statistics for male winners and overall winners. In fact, the medians of these groups are the same, and the first and third quartile are very close as well. On the other hand, female winners have decidedly different statistics. Most notably, the majority of the data is at the bottom. Since the first to third quartile is concentrated between 0 and 1, it is clear that there were only 0 or 1 female winners most years. This means that most winners are men and women are not well represented.

Here, blue is used to represent male winners and red is used to represent female winners. These are socially common colors for the genders so they are easy for the viewer to understand. Additionally, this lends itself well to using purple for the overall statistics since red and blue mixed together make purple. The marks in this visualization are lines; the channels are height.

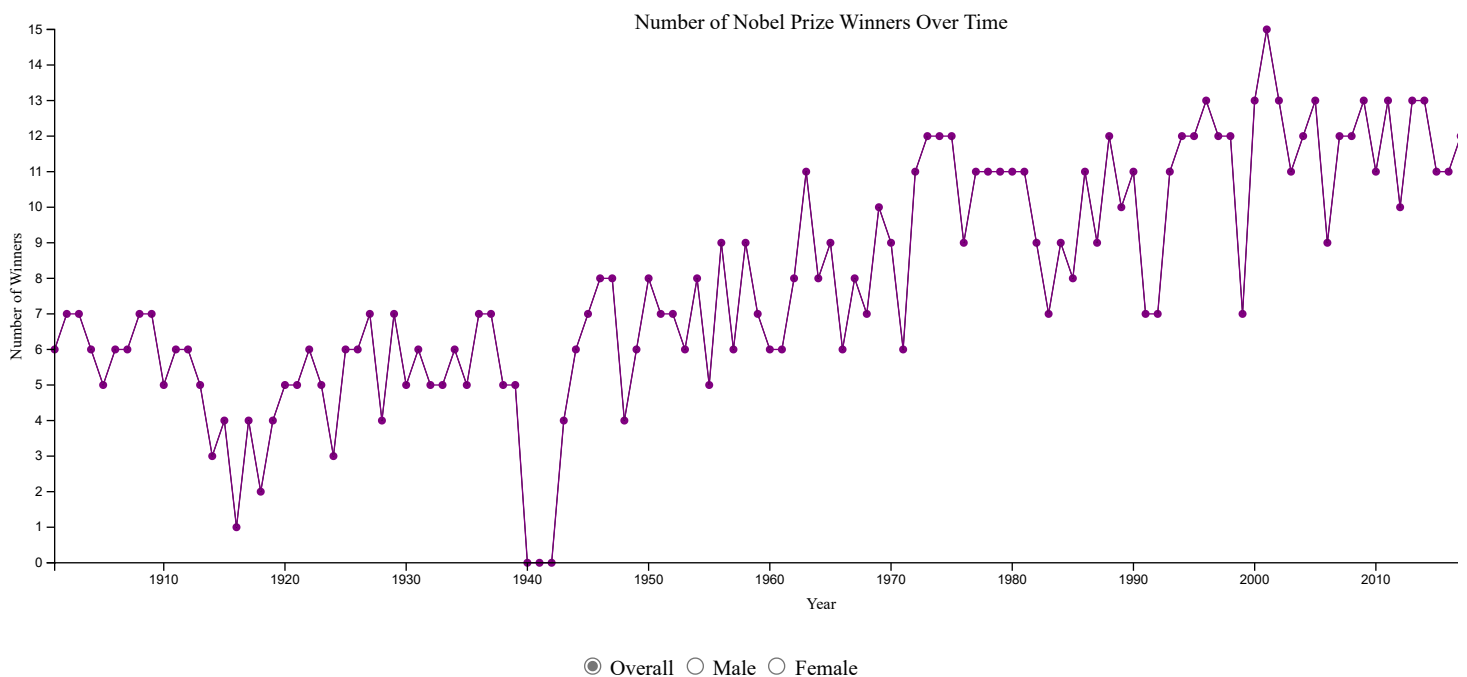


Male vs Female Nobel Prize Winners per Year:

What is the comparison between the number of male winners each year and the number of female winners each year? The line shows the case where the number of female winners is equal to the number of male winners. Hover over a point to see its exact values, along with each year the data is from.

The line shows the case where the number of female winners is equal to the number of male winners; this never occurred. There was also no year with only female winners, but there were many years with only male winners. It is clear that most winners are men, and very few (if any) of the winners each year are female.

Since blue was previously used to represent male winners and red to represent female winners, purple is used here for overall statistics because red and blue mixed together makes purple. The marks in this visualization are points; the channels are horizontal and vertical position. Here, the x and y axis are not scaled separately; this makes the comparison between male and female winners more clear to the viewer. It is clear that the majority of the points are clustered near the bottom; this is because there are more male winners than female winners. This would not have been as apparent if the x and y axis were scaled separately.

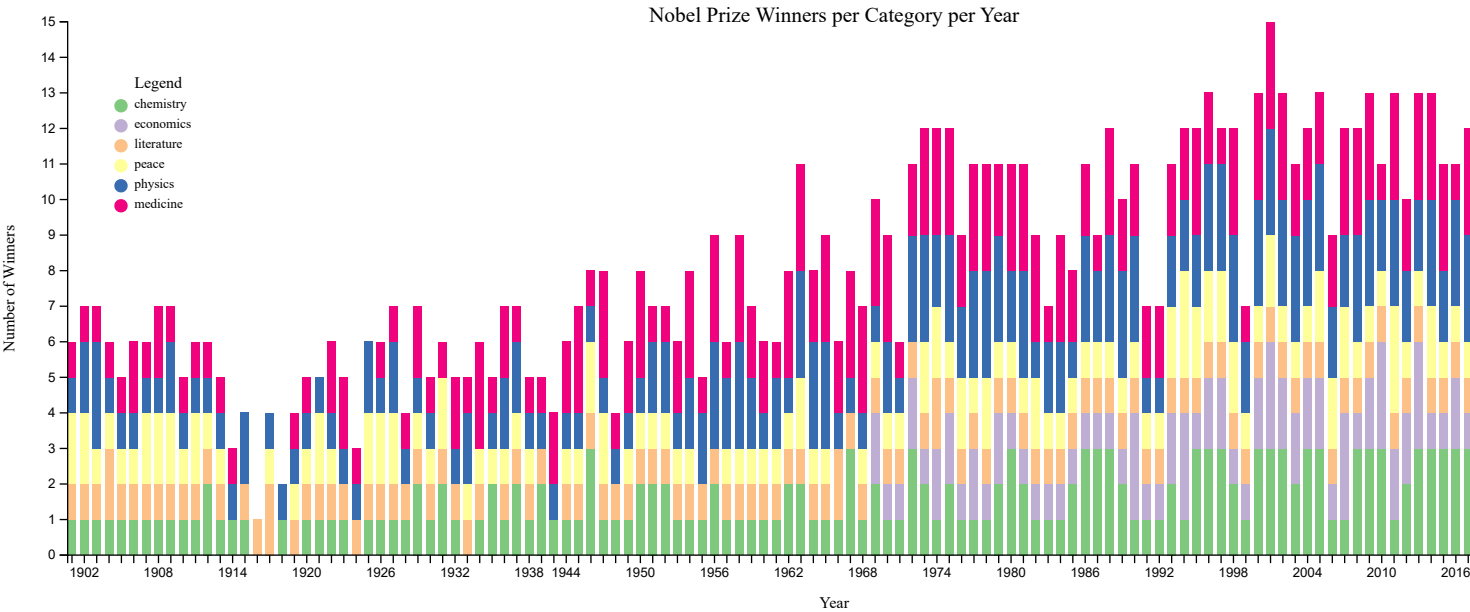


Number of Nobel Prize Winners Over Time:

The number of winners could fluctuate every year due to ties, group work, or new awards being added. Has there been a trend in the number of Nobel Prize winners over time? Toggle the buttons below to see the overall trends, as well as trends for female winners and male winners. Hover over a point to see its exact values, along with which year the data is from.

Overall, there has been an increase in the number of winners per year; there is a slight upward trend. The years 1940-1942 did not have any winners; the Nobel prize was not awarded in these years due to WWII. There is also an increase for male winners, although it is not as defined. For female winners, there is no real trend. There are usually either 0 or 1 female winners each year with a few notable spikes here and there. There is still a large discrepancy between the number of female winners and male winners, but it is worth noting that these spikes are more recent (2004, 2009, 2011, 2018, 2020); perhaps this is evidence that the Nobel Committee is moving toward equality.

Once again, blue is used to represent male winners and red to represent female winners. Purple is used for overall statistics since red and blue mixed together make purple. The marks in this visualization are points; the channels are horizontal and vertical position, and color.

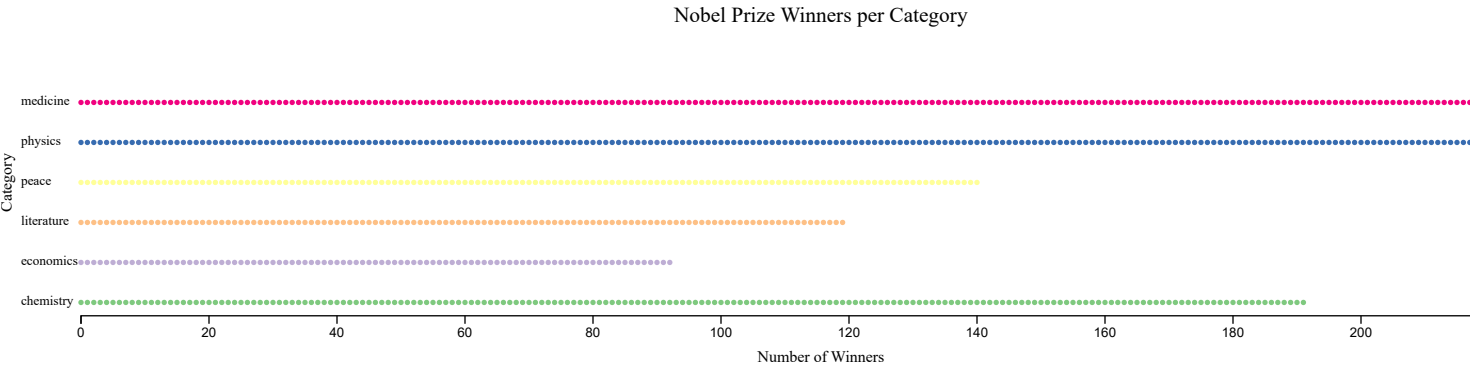


Nobel Prize Winners per Category per Year:

How many winners are there per category per year? The years with no winners (1940-1942) are excluded in this visualization. Hover over a bar to see its exact value.

In the visualization, it can be seen that Physics and Medicine make up a big chunk of the winners, especially since the late 1960s. This visualization also shows the introduction of Economics, which also contributed a large number of winners in recent years. Each year, these three categories make up a large proportion of the winners.

Here, d3 schemeAccent is used in order to give each category its own distinguishable color while still looking aesthetically coherent in the stacked bar chart. The marks in this visualization are lines; the channels are horizontal and vertical position, and color. The years that had no winners were omitted because there were already a lot of years to show and the visualization was getting overwhelming.



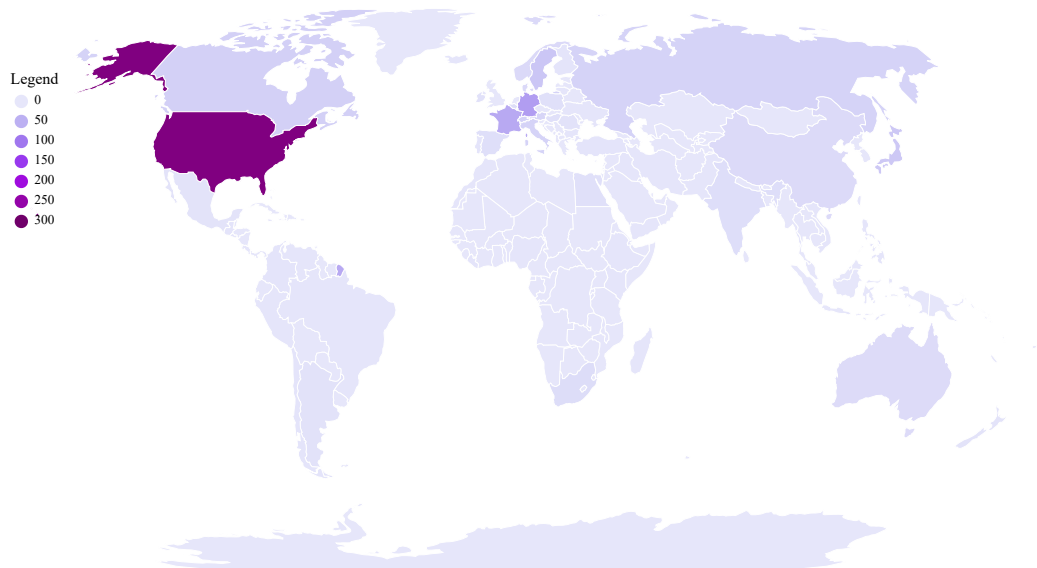
Nobel Prize Winners per Category:

How many Nobel Prize winners are there in each category?

This visualization makes it clear that Physics has the most winners, followed closely by Medicine. Chemistry is third. This is reasonable since advancements in science are rarely done individually so the prize is often given to a group as opposed to a single person. On the other hand, winners of Peace or Literature usually work alone so there are less winners in these categories. Economics has the least winners, which is expected since it was introduced much later than the other categories.

This visualization utilizes the same color scheme as the previous visualization for continuity purposes since both are about the different categories of Nobel Prizes. The marks in this visualization are points; the channels are horizontal and vertical position. The visualization is horizontal because there are only a few categories and each category has many winners.

Number of Nobel Prize Winners per Country



Number of Nobel Prize Winners per Country:

How many Nobel Prize winners are from each country? Hover on a country for its exact value. Click on the map to zoom or pan.

This map shows that the vast majority of winners are from America. France and Germany are the closest competitors. There are many countries with no winners, especially in South America and Africa. America's absolute dominance is somewhat shocking, especially since Nobel was Swedish. While other countries may be struggling from a lack of resources, Europe's poor showing is rather unexpected.

Since blue was previously used to represent male winners and red to represent female winners, purple is used here for overall statistics because red and blue mixed together makes purple. The marks in this visualization are area; the channels are color.

Conclusion

This dashboard has revealed a lot of information about Nobel prize winners. For example, Physics, Medicine, and Chemistry have the most winners. Economics has the least winners overall because it was added later, but it makes up a healthy proportion of annual winners.

While there has been some progress toward awarding more women, the vast majority of Nobel prize winners are men. This is an issue that needs to be addressed, since it represents a vicious downward spiral. When young girls do not see themselves being represented in awards like this, they lose conviction to work in these fields. This leads to a lack of women in these fields, which is a loss for the whole world. These women could contribute so much to the development of these fields if they were properly encouraged and inspired. If young girls saw women winning the Nobel Prize, they would be inspired to work in those fields. This, in turn, would lead to more talented women working in these fields and winning these prizes in the future. Winners such as Marie Curie and Malala Yousafzai have been invaluable role models to young girls around the world; their impact cannot be overstated. The Nobel Committee should aim to award more women moving forward, because currently women make up a very measly percentage of the winners.

Additionally, a majority of the Nobel Prize winners are American, with a much smaller percentage being European. This is something that the Nobel Committee should be more mindful of in the future. It would be interesting if the committee began some outreach programs in order to solicit projects from a wider variety of countries. A major goal of the Nobel Prize is to recognize talent from around the world, but it does not seem like this goal is being met currently since most of the winners are from the same few countries. Gaining representation from more countries would definitely help bring new perspectives to the table and would lead to new developments in all the Nobel fields.