Data set: Nobel Laureates

This dataset describes all the Nobel Prize winners from 1900 to 2015, including information like how long they lived, their age, the category they won in and so on. For our visualization, we wanted to focus on the history of the Nobel Prize and how aspects of it have changed over time. Our main visualization was a dot plot that represented each of the winners per every two years.

GUIDING QUESTIONS

When we looked at the data set, these were some of the guiding questions that we wanted to answer with our visualization:

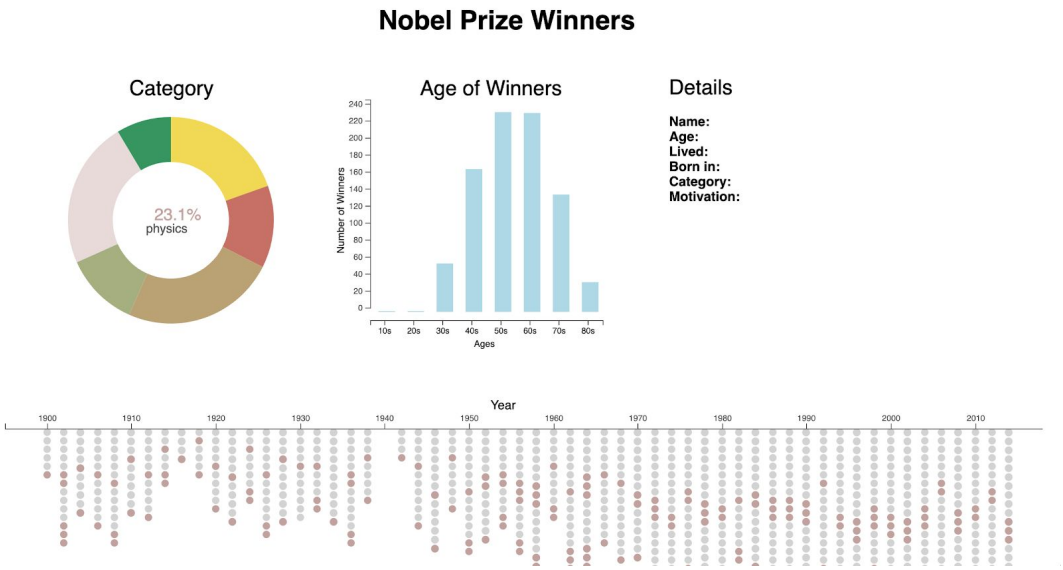
- Why are there increases and decreases in the amount of prizes given in different years?
- What category are most winners nominated for?
- Are most of the prize winners alive or dead?
- How old were most of the winners when they received their award?
- Are there a consistent number of awards per year?
- If there is a change in the amount of prizes in a certain year range, why?

Our visualization supports these questions through the tasks that the user can perform. We first present the user with an overview of all the data by showing each winner as a dot on a timeline. The user is also presented with two charts, one that shows the categories of the prizes won and another that shows the age ranges of the prize winners

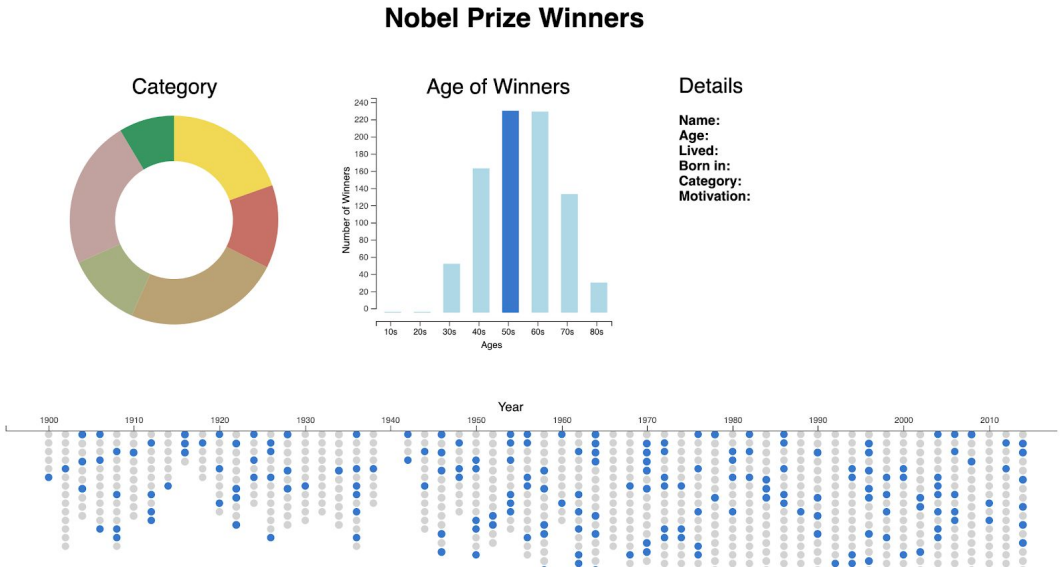
TASKS

After this overview we support several tasks with our visualization, including:

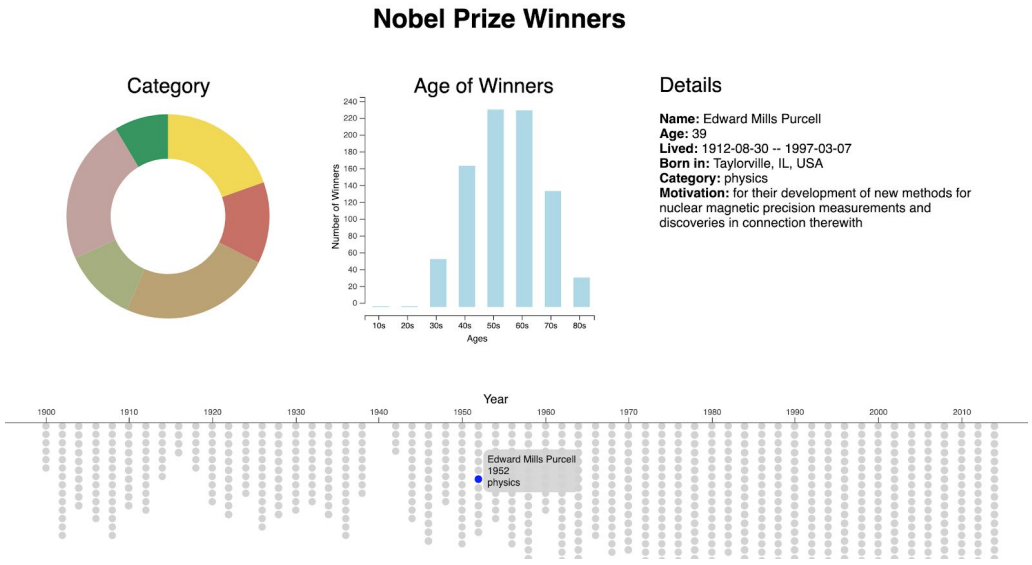
- Filter by category



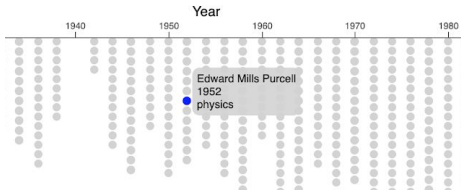
- Filter by age range



- Retrieve details for specific people (when clicking on a dot) -- details-on-demand



- Find clusters while exploring categories or age ranges
- Tooltip hovering for seeing some details



- Find anomalies in the dot plot
    - For example, no prizes won in 1940-1941 or a jump in the number of prizes won around 1970

ANSWERING QUESTIONS

This visualization supports our guiding questions because we allow the viewer to explore many facets on one page. The details on demand help the user when looking for specific data. The multiple views available allow the user to see an overview in any context they choose. For example, when answering the question “How old were most of the winners when they received their award?”, the viewers can use the interaction from the age chart to determine not only the number or winners but see how those winners are spread out when looking at the timeline.

DESIGN CHOICES

We chose to show the categories in a doughnut chart so it is easy for the viewer to see how one category can compare to the other. Hovering over each category revealed the percentage that category made up, as well as highlighting all the winners in that category. The labels are shown on hover to make the visualization less crowded with text, minimizing the data-ink ratio.

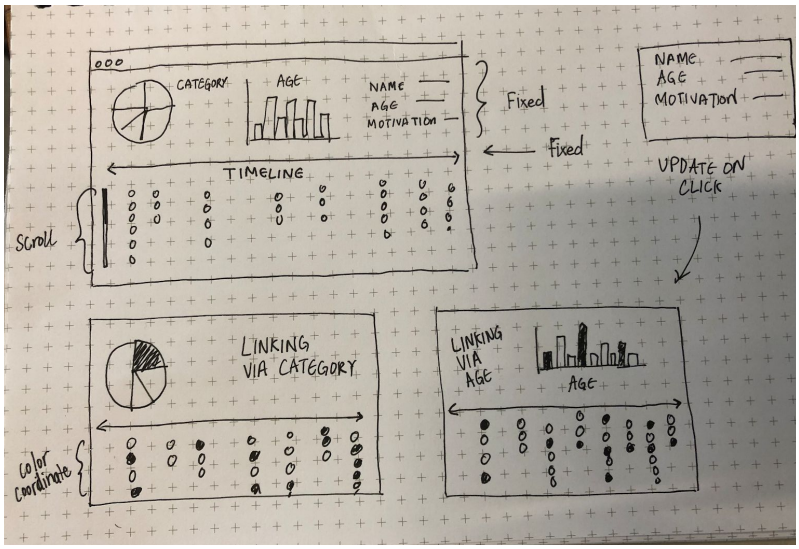
For the age ranges we chose a bar chart so that on quick glance the user can see what was the biggest or smallest age-group of the prize winners.

The timeline is shown through an upside down bar chart so that the user can receive overviews of the data and what years are encompassed without having to scroll down.

The entire text is in Helvetica which is a web-safe font.

Initially, we wanted to lump as much information about the winners as we could into the chart. However, after some reviewing we thought it would be best to focus the user on a smaller group of attributes for winners rather than overwhelm them with too many options. Constraining the number of attributes pushed the user to dig deeper into what was displayed rather than simply focusing on the overview.

Here is our preliminary design idea:



Ultimately, although we had many ideas for potential designs and filters, we decided to narrow down and focus on 2 main charts so that the user is not overwhelmed and it is clear what tasks they can do on the visualization.