Homework Review

BIOE 498/598

2/12/2020

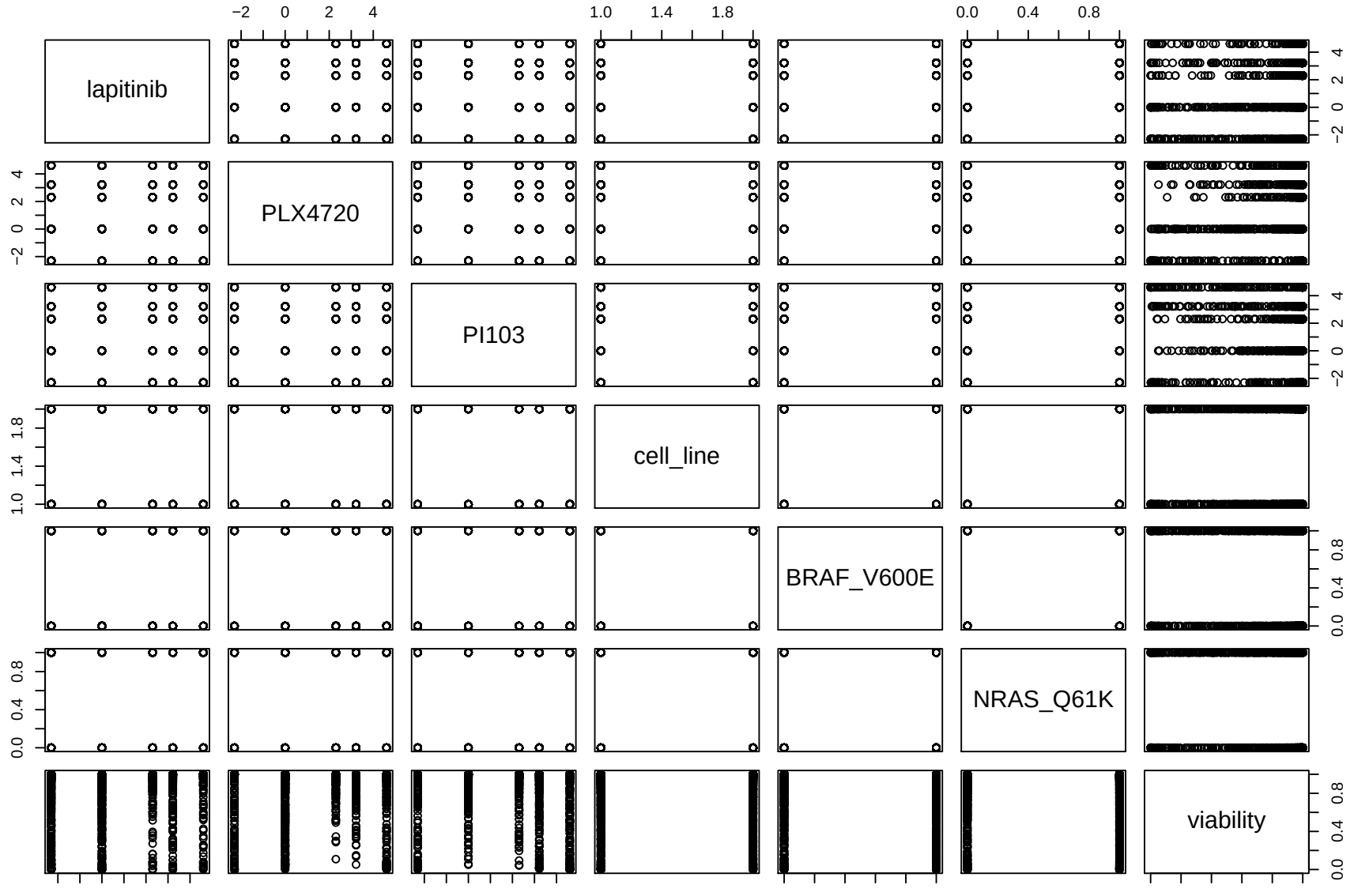
What to show us:

- **Objectives**: what did you want to find out.
- **Data**
  - Where you got it.
  - Ranges and *distributions*.
  - Units

Correlation plots:

Use these for diagnosis; only show anything interesting.

```
data <- read.csv("Melanoma_screen.csv"); plot(data)
```



Methods

What you did and *why*. No results; keep it brief but precise.

Results

- State results so they are meaningful for your audience.
  - **Bad**: The effect size for cell_lineSkMel was significant ($\beta = -0.08$, $p < 10^-5$).
  - **Good**: The viability for SkMel cells was 8% lower on average.
- Effect sizes matter; people conflate p-values with effect sizes, so it's best to avoid reporting them.
- Only report significant conclusions. This avoids having to say "significantly" after every result.
- Insignificant results of interest can also be reported but should be labeled as such.

How to write Results

1. Write down a result.
2. Ask yourself “what does this mean?"
3. Delete what you originally wrote and write the meaning instead.

Conclusions

- Results answer “what does this mean?".
- Conclusions answer “why does this matter?".
- Example:
  - **Result**: Viability of SkMel cells was 8% lower on average.
  - **Conclusion**: We need to decide if which cell line is a better model. Other results on SkMel cell lines should be normalized before comparisons are made.

Now, let's look at our data.

```
plot(sort(data$viability))
```