

# Developing and delivering an RSS William Guy Lecture

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# About me

- RSS William Guy Lecturer in 2024-2025 (*statistics in plain sight*) for 11-16 year olds.
- Transitioned from academia to public sector during William Guy term.
- Co-author of Royal Statistical Society's *Best Practices for Data Visualisation* guidance, and secretary of the Teaching Statistics Section.

# Aims of talk

- 11-16 year age group is often when young people start making their own decisions (about health).
- Highlight the social good you can do with statistics and data.
- There's a broad range of things you can do with statistics and data, and show my journey of getting here.

# From lab to patient: how statistics shapes decisions in medicine

- Statistics behind clinical trials.
- Real-life examples that students would be familiar with.
- Avoided too many Covid-19 examples.

## An experiment...

- Let's say you develop a brand new treatment for the common cold.
- You give your new treatment to 50 people who have a cold.
- After a week, 49 people are fully recovered.
- Does the treatment work?



# From lab to patient: how statistics shapes decisions in medicine

"Coin flip" 1



"Coin flip" 2



"Coin flip" 3

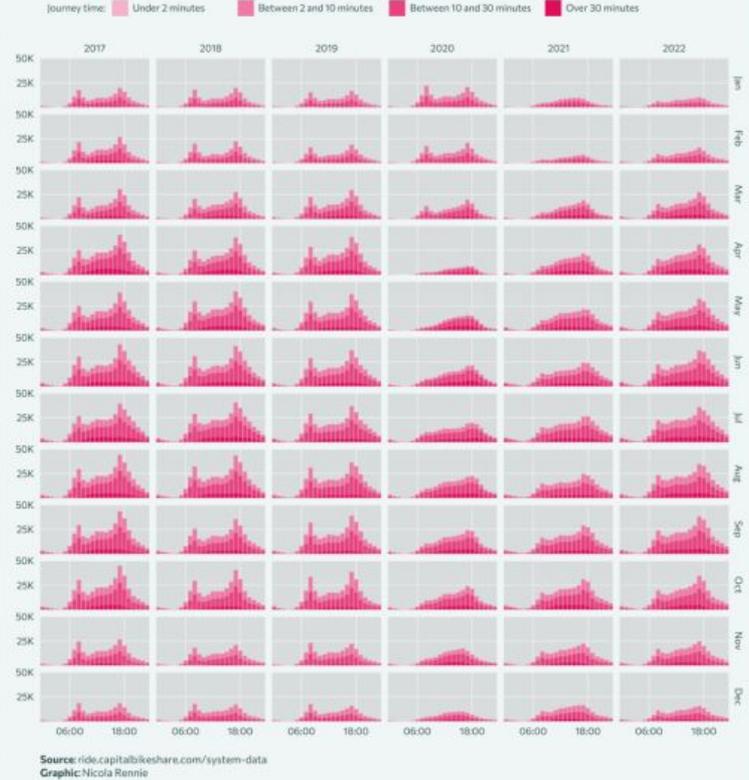
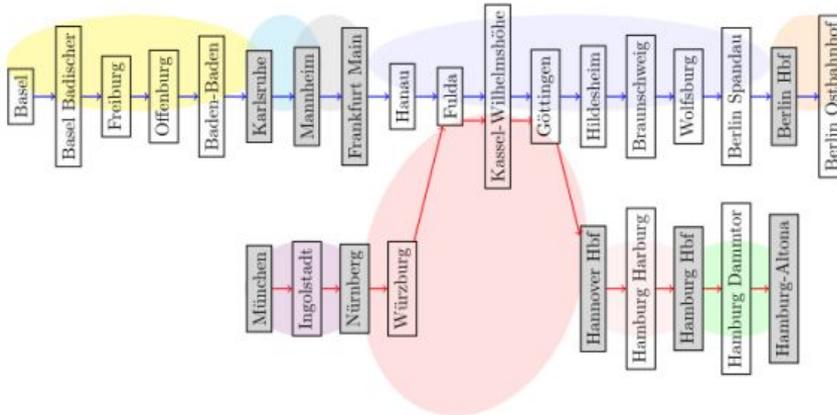
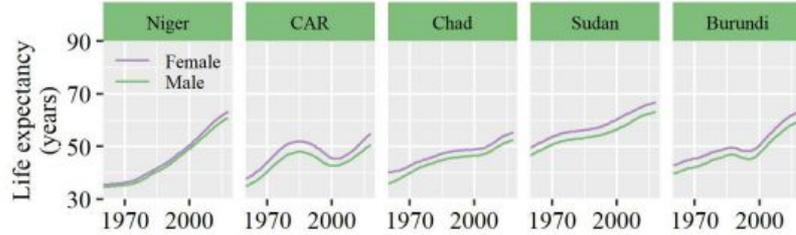


# The talk evolved over the year

- 11-16 years is a broad age gap
  - Younger students: more in-depth on applications
  - Older students: more careers focus
- I changed jobs...
- ... and location!

# Statistics in plain sight

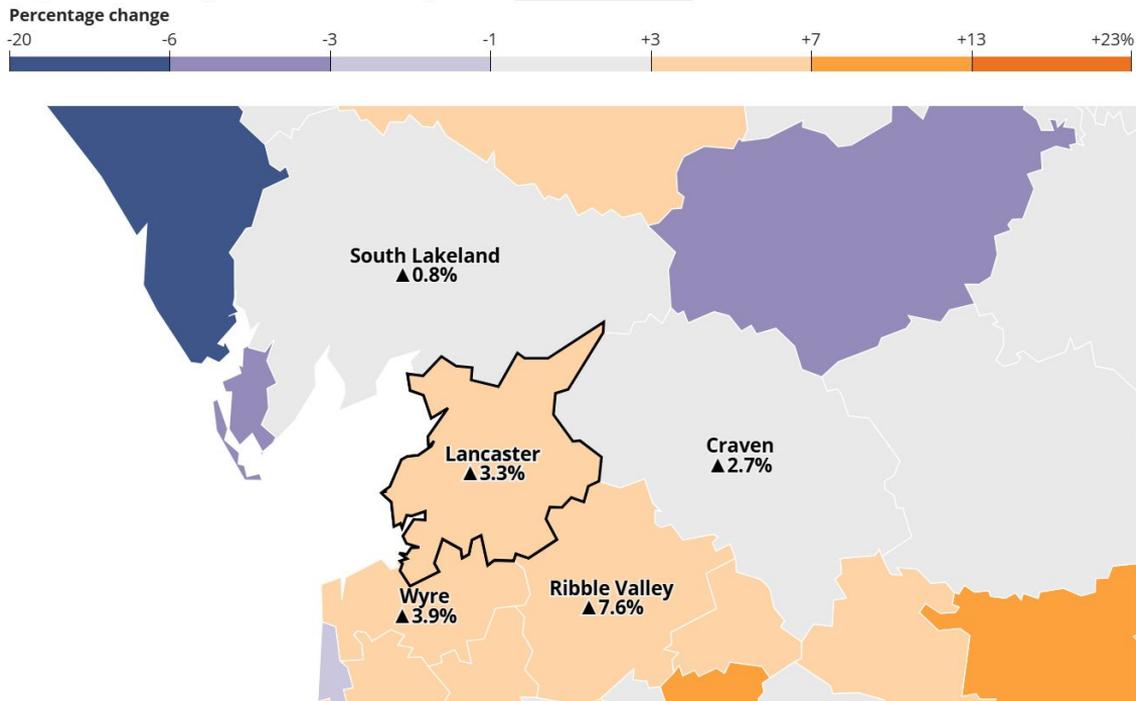
Life expectancy in the five least developed countries



# Make it relevant

Nearby areas like [Ribble Valley](#) and [Wyre](#) have seen their populations increase by around 7.6% and 3.9%, respectively, while others such as [Craven](#) saw an increase of 2.7% and [South Lakeland](#) saw smaller growth (0.8%).

Population change in local authority areas near Lancaster between 2011 and 2021



[www.ons.gov.uk/visualisations/censuspopulationchange](https://www.ons.gov.uk/visualisations/censuspopulationchange)

# Tips and advice

- Keep it short
  - Have slides you can add in and take out
- For in person, have slides in multiple formats and don't rely on WiFi
- I mostly focused on talks via maths/stats teachers and events
  - Reach out to application areas more e.g. geography/biology teachers
- Be prepared for unrelated questions

# Resources

- **William Guy slides:** [github.com/nrennie/rss-william-guy-lecture](https://github.com/nrennie/rss-william-guy-lecture)
- **ONS school resources:**  
[www.ons.gov.uk/aboutus/usingpublicdatatoproducestatistics/learningaboutdata/navigatingnumberstheonsdataeducationprogramme](https://www.ons.gov.uk/aboutus/usingpublicdatatoproducestatistics/learningaboutdata/navigatingnumberstheonsdataeducationprogramme)
- **STEM Ambassadors:** [www.stem.org.uk/stem-ambassadors](https://www.stem.org.uk/stem-ambassadors)



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