

# Causal Inference in R: Introduction

2020-07-29

```
> who_are_we(c("lucy",  
"malcolm"))
```



<https://www.lucymcgowan.com/>



<https://www.malco.io/>

# The three practices of analysis

- 1 Describe
- 2 Predict
- 3 Explain

Normal regression estimates associations. But we want *counterfactual, causal* estimates:

What would happen if *everyone* in the study were exposed to x vs if *no one* was exposed.

**For causal inference, we need to make  
sometimes unverifiable assumptions.**

**Today, we'll focus on the assumption of *no  
confounding*.**

# Tools for causal inference

- 1 Causal diagrams
- 2 Propensity score weighting
- 3 Propensity score matching

# Other tools for causal inference

- 1 Randomized trials
- 2 G-methods & friends
- 3 Instrumental variables & friends

**RStudio Cloud:** <https://bit.ly/causal-r-cloud>



# Resources

**Causal Inference:** Comprehensive text on causal inference. Free online.

**The Book of Why:** Detailed, friendly intro to DAGs and causal inference. Free online.

**Mastering 'Metrics:** Friendly introduction to IV-based methods

