
Bayesian Model Group
5 August 2025

How the group works

- Meets every two weeks with someone presenting their question/model and what they need help on
- Learn by ...
  - Actively helping others with their models
  - Getting help on your models

How a group like this succeeds

- Everyone comes every week (within reason) and actively participates
- Everyone gives of their time freely in the meetings (no phones, working on other stuff, etc.)
- Models are openly shared with data, code etc.
- Everyone recognizes that they can help with various aspects of modeling (thinking biologically, coding, etc.)
- No model is too simple or complex to present as long as you make it possible for others to follow you!

How to present when it's your week

Some guidelines

- Clearly state your question and/or aim
- Give sufficient background so everyone can engage with the question/aim
- Describe where in the workflow you are
  - Formulate model
  - Simulated data to test model
  - Fit model to empirical data
  - Retrodictive checks
- Describe what you need to help with (e.g., formulating the model? Thinking about priors? Developing a retrodictive check?)
- Plan to present for no more than 30 minutes (maximum; we aim for a 60 minute meeting with the room reserved for 90 mins)

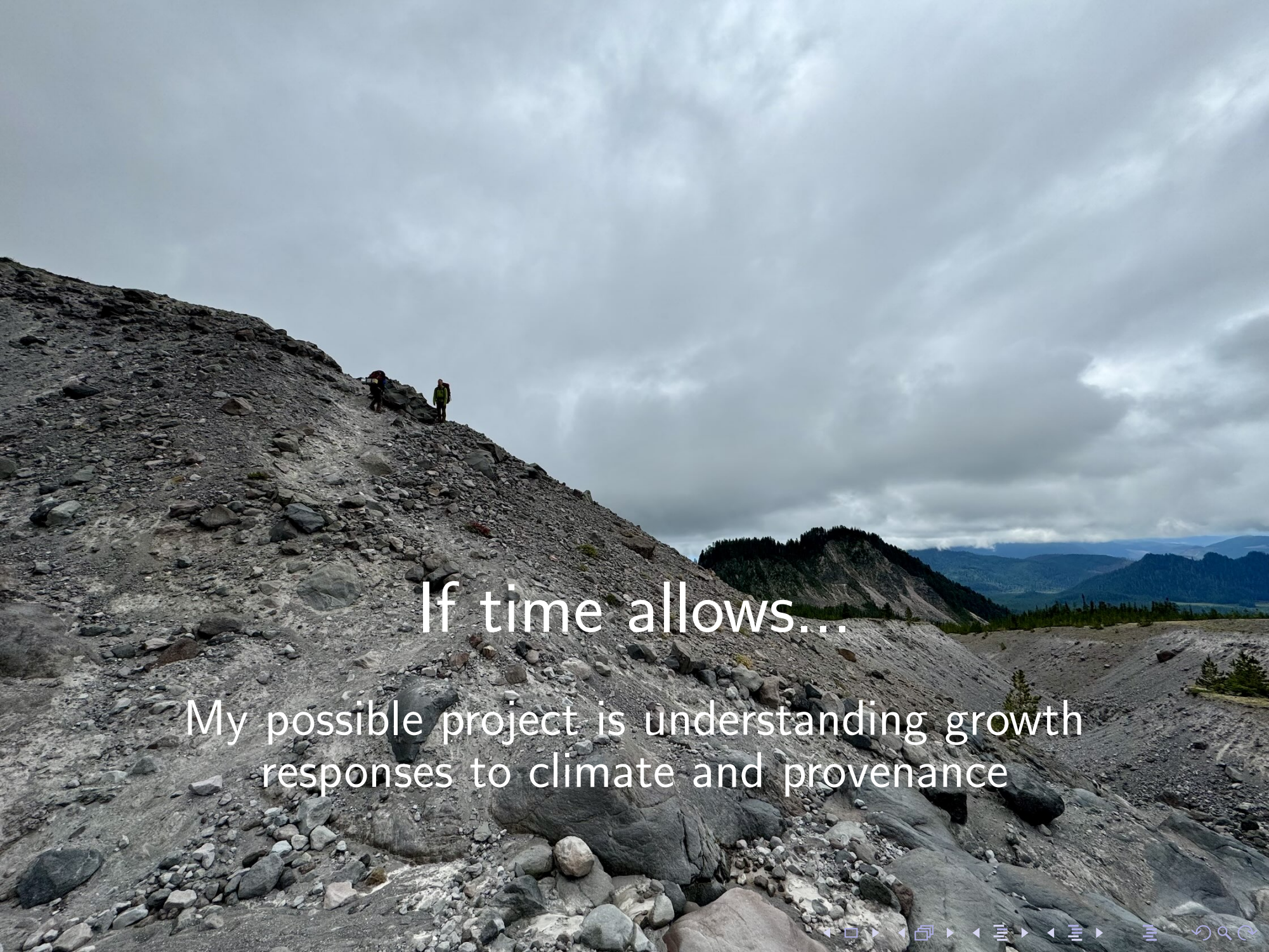
How to present when it's your week

Some more guidelines

- You can present your model progress multiple times! (*This is how it has worked in the past.*)
- Share code/data/slides via a public repo or on the meeting repo (slides, code, working from the board are all good ways to present)
- I pulled some random examples here

Questions & Scheduling ...

- Questions?
- Sign up!



If time allows...

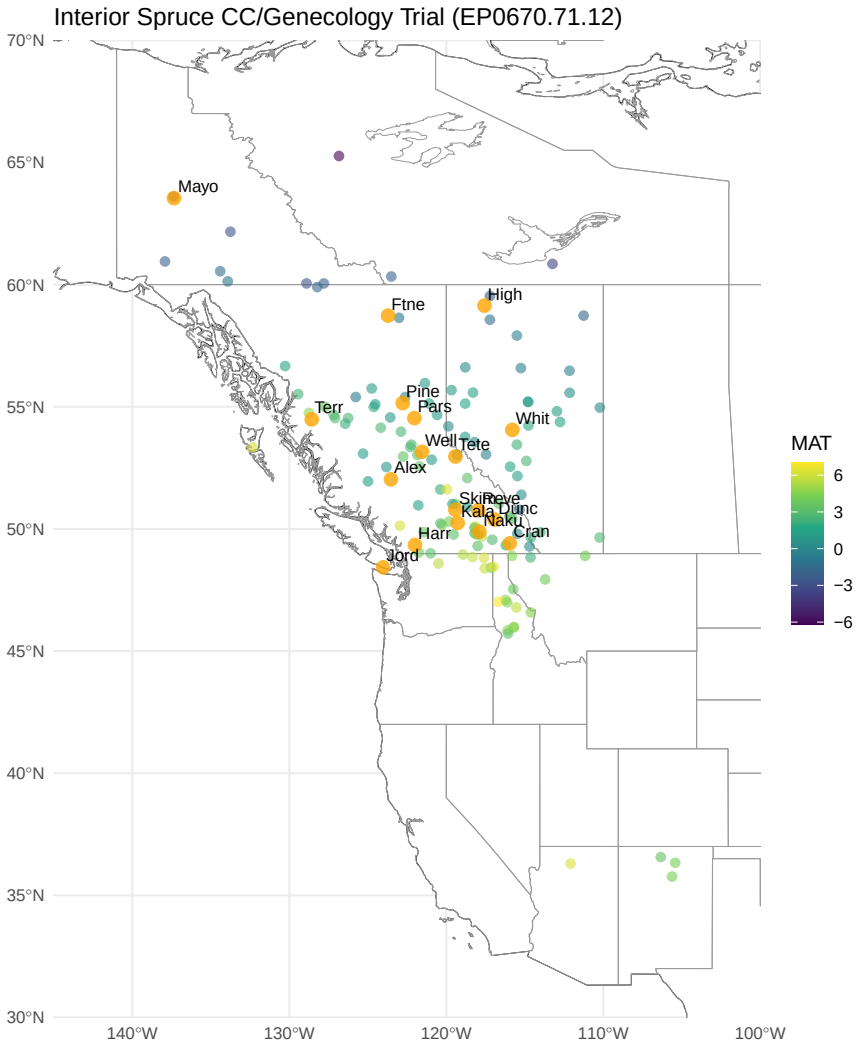
My possible project is understanding growth responses to climate and provenance

How does provenance and climate affect tree height?

- I'd like to build a model that could predict tree height for one species based on where the tree is planted and the provenance of the tree
- I think trees grow bigger where it's warmer (and I will start by imagining that temperature is the only important thing on earth)
- But I also think there's local adaptation ...

How does provenance and climate affect tree height?

Imagine I have data from 17 common gardens x 128 provenances



How does provenance and climate affect tree height?

I am still on the stage of thinking on figures and math ...

- I could pretend that provenance is just adding some height up or down and trees grow linearly with temperature ...

$$\hat{y} = \alpha_0 + \alpha_{provenance} + \beta(C)$$
$$\alpha_{provenance} \sim MVN(0, \sigma_\alpha^2)$$
$$y \sim normal(\hat{y}, \sigma_y^2)$$

... which seems wrong