April 18, 2018. **Niche evolution**

**Reading:**


**Outline**
1. Geographic space and Climate space
   a. Niche evolution occurs in climate space
   b. Dispersal and gene flow occur in geographic space
   c. Climate is geographically structured
   d. So it’s hard to know how the two interact!
2. Geography, environment and speciation
3. Niche models
   a. Climate envelopes
   b. Maxent statistical models
4. Reconstructing niche evolution
   a. Species mean climate values as traits
   b. Min/max as traits
   c. Is niche breadth intraspecific variation or a trait?
5. Niche conservatism during dispersal

![Diagram](image-url)

**Fig. 1.** Speciation mechanisms predicted from combined information on geographic and environmental space use by sister lineages.


