**Introduction**

1. Evolvability is an important concept for understanding directions of morphological change through time
2. The modern quantification of evolvability is done using G matrices
   1. It is difficult to get the G matrix
   2. P matrix may substitute
      1. As proposed by Cheverud
   3. P has been examined in the past by Hunt, works!
   4. Still, don’t know how representative P is of G
      1. Cheetham and Porto et al showed pooled G works
   5. For those that have used G, did so in a phylo context, so no fossils
3. Want to know if G can change through time
   1. Why is this an important concept??
   2. To do so, need to be able to estimate G through time, which is difficult because don’t have known breeding populations millions of years ago
4. Also want to know if changes in P happen along same major axes of variation as G
   1. i.e., above average directions of evolvability
   2. What is G changing within, what is P changing within
   3. This is probably in the wrong spot, need ot figure out narrative
5. Can use bryozoans to address this!
   1. Clones, so all variation in P is due to E, not G
   2. Have a fossil record through time
   3. Specficially Steginoporella magnifica
      1. Simple system
6. Specifically, we ask:
   1. How well does P represent G?
   2. Does G change through time?
   3. Does P align with G max?
   4. Is P changing in directions of above average evolvability?