

EVOLVABILITY

Woods *et al.* 2011

- 1.) After the 883 generation replay experiment, the EWs did not always win in head-to-head competitions with ELs. Could you predict this from comparing Fig 2a and Fig 2b?
- 2.) In determining whether or not EWs had greater mutation rates than ELs, the genomes of the isolates post-replay evolution experiments were sequenced. What did the sequences reveal?
- 3.) Might the fitness effects of epistatic interactions between mutations vary across environments? If so, would EWs maintain their trajectory in Fig. 3?

Garfield *et al.* 2013

- 1.) Later in development, correlation in expression between pairs of genes with known regulatory interactions is greater than in pairs of random genes (Fig. 4). Is this increased correlation ecologically valid?
- 2.) If regulatory interactions are switch-like and insensitive during early development, potentially promoting the accumulation of cryptic genetic variation (Fig 4), why might we see increased familial variation in the expression of SM30E (Fig 2B) later in development?
- 3.) Is there convincing evidence that larval morphology (in any stage of development) is correlated with skeletogenic gene expression?

Rabosky *et al.* 2013

- 1.) How might taxonomic classification obscure our ability to reliably relate rates of speciation with rates of phenotypic evolution?
- 2.) Does Figure 5 further support Figure 4's demonstration of a correlated relationship between rate of speciation and rate of phenotypic evolution?
- 3.) Is the correlation between rate of speciation and rate of phenotypic evolution driven by punctuated equilibrium or evolvability? What evidence would you need to determine this?