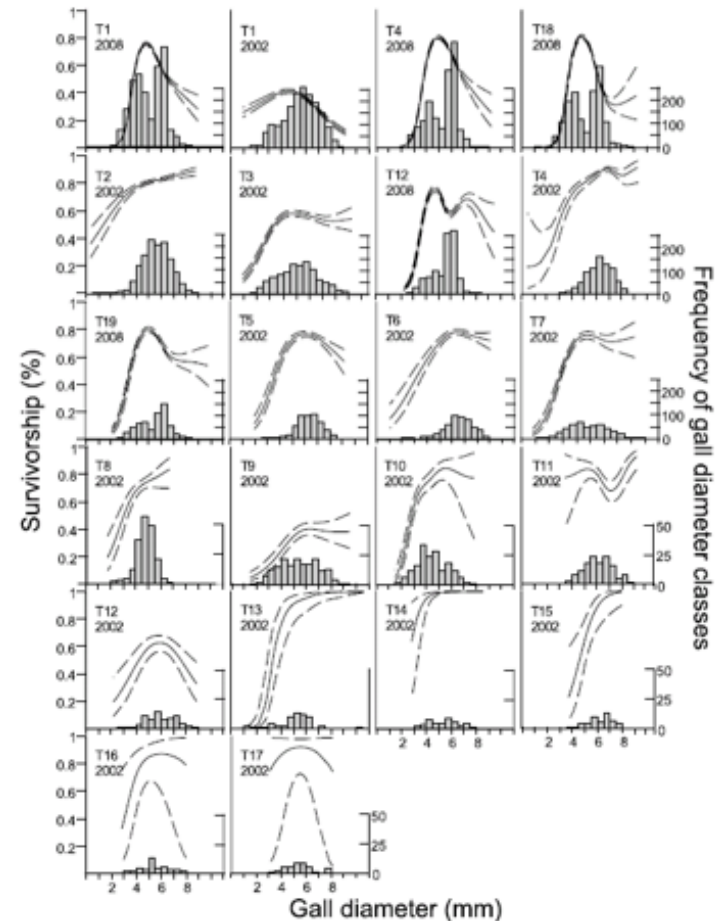


Evaluating heterogeneity in the form of phenotypic selection among populations using b-splines

Assessing variation in the form and magnitude of selection is central to determining whether populations share the same evolutionary trajectory. Along with colleagues Richard Reynolds and Gustavo de los Campos (University of Alabama) and S. E. Egan (University of Notre Dame) we are exploring the use of Random Regression in combination with B-splines as a means of testing for heterogeneity in fitness functions. We are using this approach to compare fitness functions that relate variation in survivorship of asexual generation gall formers to variation in leaf gall size—in the absence of natural enemies, among replicated *B. treatae* populations. This approach can identify region(s) of the fitness function where the covariation of gall size and fitness is most variable among populations and thus provide insight into the biological basis of variation in selection.

Fitness functions (\pm 95% CI) relating variation in survivorship to gall size in each of 22 *B. treatae* populations



From Egan et al Evolution 2011