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Genetic Markers and Floral Organ Variation  
in *Spergularia marina* (Caryophyllaceae)

Natural populations of the autogamous herb *S. marina* exhibit unusually high levels of variation in male fertility. Stamen number can vary from 0-10 stamens per flower with some flowers also featuring partial stamens and chimeric organs composed of varying proportions of petal and stamen tissue. *S. marina* has long been of interest to ecologists studying microevolution. However *S. marina* is also intriguing from a developmental point of view as it presents an opportunity to understand the genetic mechanisms that give rise during development to intraspecific phenotypic variation. Floral organs develop in four concentric whorls from the stem cells of the floral meristem. According to the classic ABC model of floral organ identity, B function genes AP3 and PI specify the development of petals and stamens in whorls two and three. One possible explanation for the unusual phenotypes that we find in *S.marina* whorls 2 and 3 is that B-function domain is reduced during the early stages of development. I cloned an orthologous floral homeotic gene APETALA3 (AP3) from *S. marina*. We intend to use this AP3-like gene as marker of B function expression during floral development. Future research efforts will look at B function expression spatially through RNA in situ hybridization and quantitatively through quantitative PCR.