

DEPARTMENT OF ECOLOGY & EVOLUTIONARY BIOLOGY
FALL 2016 SEMINAR SERIES

The Evolutionary Consequences of Whole-Genome Duplication

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Polyploidy has long been recognized as a key evolutionary force in plants, and recent genomic analyses indicate that all angiosperms bear the signature of whole-genome duplication (WGD). Despite rampant WGD, the number of estimated genes remains roughly constant in all plant genomes, regardless of size. Recent polyploids, such as *Tragopogon mirus* and *T. miscellus*, which originated in the early 1900s, offer the opportunity to examine the evolutionary and genomic changes that occur shortly after polyploid formation, with implications for processes of genome evolution. Data for these recent polyploids demonstrate the dynamic nature of polyploid genomes. Chromosomal, genetic, and genomic changes collectively yield novel genic combinations that may translate into phenotypic novelty. On a macroevolutionary scale, WGDs mark the origin of seed plants, angiosperms, eudicots, and other hyperdiverse groups, suggesting a possible causal role of WGD in the diversification of these clades. Moreover, many such clades are characterized by novel traits, suggesting that features that arise via microevolutionary processes may translate into key innovations on macroevolutionary timescales.

Friday, September 9, 2016
Pre-talk reception: 3:00pm, Dabney 568
Seminar: 3:30 – 4:30pm, SERF 307