1067-18-228 **Emily Riehl*** (eriehl@math.uchicago.edu), Department of Mathematics, 5734 S University Ave, Chicago, IL 60637. *Algebraic model structures.*

In higher category theory, it is often productive to think of morphisms *algebraically*: equipped with some particular structure, rather than satisfying some defining property. Exploring this perspective in algebraic topology, we introduce *algebraic model structures*, which augment Quillen's model categories. Despite the plethora of familiar examples, this new theory has some peculiar features, which we describe. We also "algebraicize" classical results: for instance, defining an *algebraic Quillen adjunction* and proving they exist in common situations. (Received August 10, 2010)