1145-08-461    **Joshua R Edge\*** (`josedge@indiana.edu`). *Classification of spin models on Yang-Baxter planar algebras.*

After the discovery of the Jones polynomial in the 1980s, many mathematicians were interested in finding sources for more invariants of knots and links. One promising method pursued by Kauffman, Jaeger, et al was via so-called spin models, whose original purpose was to explain magnetism in certain physical models. The classification of such models for the Jones polynomial was first noted by Kauffman in 1986, which Jaeger then generalized to the classification of spin models for the Kauffman polynomial (or BMW algebra) in 1995 by connecting the existence of such a model to graphs satisfying certain properties. In 2015, Liu finished the classification began by Bisch and Jones of so-called Yang-Baxter planar algebras (YBPAs), planar algebras that satisfy a generalization of the Reidermeister moves. In this talk, we will use the classification of YBPAs to generalize Jaeger's result about spin models of the Kauffman polynomial (which itself is a YBPA) to classify all spin models of Yang-Baxter planar algebras by making a connection to graphs similar to Jaeger. In particular, we will demonstrate that aside from the spin models arising from BMW classified by Jaeger, the only other YBPAs giving spin models are the Bisch-Jones algebra and the Jones polynomial at a discrete sets of values. (Received September 06, 2018)