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Kathleen Grace Kennedy* (kgracekennedy@math.ucsb.edu), 775 Juniper Walk, Apt. D,
Goleta, CA 93117. *A Diagrammatic Multivariate Alexander Invariant of Tangles.*

In 1923, Alexander discovered the Alexander Polynomial of a knot, which can tell if certain knots are distinct. About fifty years later, Conway published a multivariable version of the Alexander polynomial that could help distinguish links. He also defined the skein relation that provided a pictorial way of calculating the original single variable polynomial. Last year, Stephen Bigelow gave a new diagrammatic method for calculating the Alexander polynomial of a knot by resolving crossings of a knot or link in a planar algebra. I will present my multivariable version of Stephen Bigelow's calculation, which is the Multivariable Alexander Polynomial defined by Conway. One advantage of my algorithm is that it generalizes to a multivariable tangle invariant up to Reidemeister I. (Received August 14, 2012)