1142-08-165   **James Garrett**, **Natasa Jonoska** and **Masahico Saito*** (`saito@usf.edu`). *Variations of Temperley-Lieb algebras for DNA origami.* Preliminary report.

DNA origami is a method to construct desired planar shapes by DNA, which will be explained without technical details. We propose an algebraic approach to represent and study DNA origami structures by monoids that are variations of Temperley-Lieb algebras. We identify two types of basic building blocks of DNA origami structures and use them as generators of monoids, called origami monoids. The concatenation of building blocks corresponds to the monoid operation. We identify a set of relations that reflect feasible DNA structures and their simplifications. The origami monoids project to the product of the monoid version of Temperley-Lieb algebras. We present several computational results and observations about Green's relations for the origami monoids. (Received September 02, 2018)