1151-05-170   **Joanna Ellis-Monaghan*** (`jellis-monaghan@smcvt.edu`). *Graph theoretical algorithms and complexity for tile-based DNA self-assembly.* Preliminary report.

Tile-based DNA self-assembly is one of the earliest DNA self-assembly strategies. Since the target constructs are often modeled by graphs, developing optimal design strategies for this assembly method gives rise to numerous new graph parameters. We give an overview of the design problems and resulting graph parameters, together with a survey of computational complexity results, algorithmic approaches, and pragmatics solutions for common graph classes and target structures, concluding with a rich vista of open problems. (Received August 17, 2019)