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Andrew Vince* (avince@ufl.edu), University of Florida, and **Miklos Bona** (bona@ufl.edu), University of Florida. *The Number of Ways to Assemble a Graph.*

Motivated by the question of how macromolecules assemble, the notion of an assembly tree of a graph is introduced. Given a graph G , the talk will be concerned with enumerating the number of assembly trees of G , a problem that applies to the macromolecular assembly problem. Explicit formulas or generating functions are provided for the number of assembly trees of several families of graphs, in particular for what we call H -graphs. In some natural special cases, recent results of Zeilberger and Apagodu on multivariate generating functions and results of Wimp and Zeilberger can be used to deduce precise asymptotic formulas. (Received June 11, 2012)