962-57-127 Blake Mellor* (bmellor@fau.edu), Honors College, Florida Atlantic University, 5353 Parkside Drive, Jupiter, FL 33458, and Dylan Thurston. On the existence of finite type link homotopy invariants.

It has been conjectured (and generally believed) that the only real-valued finite type invariants of link homotopy were the pairwise linking numbers (since the Milnor invariants of higher order are not real-valued). Using combinatorial arguments, we have proved this for links with 5 or fewer components. However, we have recently found a simple (non-constructive) linear algebra argument which shows that non-trivial homotopy invariants of type greater than 1 must exist for links with nine or more components. (Received August 08, 2000)