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**Rob Schneiderman\*** (`robert.schneiderman@lehman.cuny.edu`), **Jim Conant** and **Peter Teichner**. *Higher-order intersections in low-dimensional topology*.

The failure of the Whitney move in dimension 4 can be measured by constructing higher-order intersection invariants of *Whitney towers* built from iterated Whitney disks on immersed surfaces in 4-manifolds. For Whitney towers on immersed disks in the 4-ball, some of these invariants can be identified with previously known link invariants like Milnor, Sato-Levine and Arf invariants. This approach also leads to the definition of higher-order Sato-Levine and Arf invariants which detect the obstructions to framing a *twisted* Whitney tower, and appear to be new invariants. Recent joint work with Jim Conant and Peter Teichner has shown that, together with Milnor invariants, these higher-order invariants classify the existence of (twisted) Whitney towers of increasing order in the 4-ball. (Received June 15, 2011)