Trisections and Heegaard Splittings of Link Complements.

A trisection of a closed 4-manifold is a decomposition of into three (4,1)-handlebodies which intersect pairwise in 3-dimensional handlebodies, and whose triple intersection is a closed surface.

Given a framed link diagram defining a handle decomposition of a 4-manifold $X$, a trisection of $X$ arises naturally from a choice of Heegaard splitting for that link complement. Conversely, trisections of $X$ give rise to framed link diagrams equipped with Heegaard surfaces which define $X$.

My talk will discuss how this construction works in more detail, explain how it has been used so far (in joint work with Meier and Zupan) and then turn to a discussion of some interesting open problems in the theory of trisections. (Received July 12, 2016)