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In a previous work, maximally orthoplectic fusion frames (OFFs) – sequences of subspaces with minimized chordal coherence equal to the orthoplex bound – were constructed in every complex Hilbert space with dimension of even prime power and in every real Hilbert space with dimension that is a power of four. These constructions rely on the existence of maximal sets of mutually unbiased bases (MUBs) and certain block designs, and we note that the maximality condition requires that the subspaces be precisely half that of their ambient vector spaces.

In this talk, we further exploit the existence of MUBs along with other types of block designs to construct more families of optimally packed fusion frames, achieving both the Welch and orthoplex bounds. These families include real OFFs where the subspaces are not necessarily half-dimension and complex OFFs in every complex Hilbert space of prime power dimension. (Received January 20, 2018)