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Thomas E. Mark* (tmark@virginia.edu), PO Box 400137 Kerchof Hall, University of Virginia, Charlottesville, VA 22904, and **Bulent Tosun**. *Embedding problems for 3-manifolds in 4-space*.

While every closed 3-manifold embeds in R^5 , there is no characterization of those 3-manifolds that admit smooth embeddings in R^4 . I will summarize aspects of the current state of this problem, including variants that ask for embeddings satisfying various convexity properties. We will see that the requirement of symplectic convexity leads to an embedding obstruction derived from Floer homology, which can resolve the problem for Brieskorn spheres. If time permits I'll sketch a connection between these ideas and potential construction of exotic smooth structures on CP^2 , first observed by Weimin Chen. (Received January 19, 2021)