Trapped surfaces were introduced in the sixties by R. Penrose in order to prove the existence of singularities of solutions to the Einstein equations of General Relativity (GR). The close concept of marginally trapped surfaces arises in the description of the apparent horizon of a black hole. This concept has become a central one in GR, being related to singularity theorems, Penrose inequalities, among others. Geometrically, a surface is said to be marginally trapped if its mean curvature vector is light-like (i.e. its squared norm vanishes). Analytically, it is an underdetermined, non-linear, elliptic PDE. In this talk I will first introduce the concepts of pseudo-Riemannian manifold (roughly speaking, the space time of GR and their generalizations), of mean curvature vector, and marginally trapped submanifolds. Then I will report on recent work that provide local, explicit descriptions of marginally trapped submanifolds of co-dimension two in several natural pseudo-Riemannian manifolds (de Sitter and anti de Sitter spaces, Robertson-Walker spaces, ...). This is joint work with Yamile Godoy (University de Córdoba, Argentina) and Nastassja Cipriani (KU Leuven, Belgium).