We will see that vectors in $\mathbb{C}^n$ have natural analogs as rank 2 projections in $\mathbb{R}^{2n}$ and that this association transfers many vector properties into properties of rank two projections. We believe that this association will answer many open problems in $\mathbb{C}^n$ where the corresponding problem in $\mathbb{R}^n$ has already been answered - and vice versa. As a application, we will see that phase retrieval in $\mathbb{C}^n$ transfers to a variation of phase retrieval by rank 2 projections on $\mathbb{R}^{2n}$. As a consequence, we will answer the open problem: Give the complex version of Edidin’s Theorem which classifies when projections do phase retrieval in $\mathbb{R}^n$. As another application we answer a longstanding open problem concerning fusion frames by showing that fusion frames in $\mathbb{C}^n$ associate with fusion frames in $\mathbb{R}^{2n}$ with twice the dimension and the same fusion frame bounds. As another application, we will show that a family of mutually unbiased bases in $\mathbb{C}^n$ has a natural analog as a family of mutually unbiased rank 2 projections in $\mathbb{R}^{2n}$. We will also show that equiangular tight frames in $\mathbb{C}^n$ have an analog as equiangular tight families of rank 2 projections in $\mathbb{R}^{2n}$. (Received June 29, 2017)