1154-14-1381 **Jack Petok*** (jp58@rice.edu). *Kodaira dimension of moduli spaces of low degree special $K3^{[2]}$-fourfolds.*

In this talk, we will consider the moduli space $\mathcal{M}$ of $K3^{[2]}$-fourfolds with a polarization of degree 2. This space has a dense open set parametrizing smooth EPW double sextics, and is closely related to rationality questions about Gushel-Mukai fourfolds. Following Hassett's work on cubic fourfolds, Debarre, Iliev, and Manivel have shown that the Noether-Lefschetz locus in $\mathcal{M}$ is a countable union of special divisors $\mathcal{M}_d$, where the discriminant d is a positive integer congruent to $0, 2,$ or 4 modulo 8. We compute the Kodaira dimensions of these special divisors for all but finitely many discriminants. In particular, for each congruence class of discriminants modulo 8, we give explicit upper and lower bounds on the unique discriminant d_0 such that the following is true: $\mathcal{M}_d$ is of general type if and only if $d \geq d_0$. We also discuss why one may want to look at $\mathcal{M}_d$ when studying the transcendental Brauer groups of very general $K3$ surfaces. (Received September 16, 2019)