On pluricanonical maps of varieties of general type

Abstract:
Hacon and McKernan have proved that there exist integers $r_n$ such that if $X$ is a smooth variety of general type and dimension $n$, then the pluricanonical maps $|rK_X|$ are birational for all $r \geq r_n$. These values are typically very large: for example $r_3 \geq 27$ and $r_4 \geq 94$. In this talk we will show that the $r$th canonical maps of smooth threefolds and fourfolds of general type have birationally bounded fibers for $r \geq 2$ and $r \geq 4$ respectively. Furthermore, we will generalize these results to higher dimensions in terms of the constants $r_n$ and we will discuss recent progress on a conjecture of Chen and Jiang.