1097-14-503 **Alan Thompson*** (amthomps@ualberta.ca), Dept of Mathematical and Statistical Sciences, 632 Central Academic Building, University of Alberta, Edmonton, Alberta T6G 2G1, Canada. *The arithmetic/thin dichotomy for Calabi-Yau threefolds and families of lattice polarized K3 surfaces.*

Recently there has been a great deal of interest in studying one-parameter families of Calabi-Yau threefolds with small Hodge numbers, motivated by the discovery of the arithmetic/thin dichotomy by Brav and Thomas. However, it remains an open problem to explain the geometric origins of this dichotomy. I will present an interesting observation relating this problem to the behaviour of fibrations of these Calabi-Yau threefolds by lattice polarized K3 surfaces of high rank. Such fibrations are characterized by a map from the projective line into the appropriate moduli space of lattice polarized K3 surfaces. As we shall see, there appears to be a close link between the ramification behaviour of this map and the arithmetic/thin dichotomy for the corresponding threefold. (Received January 28, 2014)