1135-VP-2879 **Grant Robinson*** (grobins4@calstatela.edu) and **Daphne Der-Fen Liu**. *Sequences of Integers with Three Missing Separations.*

Let D be a set of positive integers. We will examine the maximum density $\mu(D)$ of integral sequences in which the separation between any two terms does not fall in D. The sets D considered in this presentation are mainly of the form $\{1, j, k\}$. The closely related function $\kappa(D)$, the parameter involved in the "lonely runner conjecture," is also investigated. Exact values of $\kappa(D)$ and $\mu(D)$ are found for many families of $D = \{1, j, k\}$. In particular, we prove that the boundary conditions in some earlier results of Haralambis [1977] are sharp. Consequently, our results declaim two conjectures of Carraher et al. [2016], and extend some findings of Haralambis [1972] and Gupta [2000]. The connection of these results to the problem of finding the fractional chromatic number of certain distance graphs will be explained. (Received September 26, 2017)