1147-13-415 **Naoyuki Matsuoka*** (naomatsu@meiji.ac.jp), 1-1-1, Higashi-mita, Tama-ku, Kawasaki, Kanagawa 214-8571, Japan. *The defining ideals and pseudo-Frobenius numbers of numerical semigroup rings.*

Let $H = \langle a_1, a_2, \ldots, a_n \rangle$ be a numerical semigroup and $R = k[H] = k[t^{a_1}, t^{a_2}, \ldots, t^{a_n}] \subseteq k[t]$ be the numerical semigroup ring of H over a field k. The defining ideal I of R is defined by the kernel of the graded ring homomorphism $\varphi : S = k[x_1, x_2, \ldots, x_n] \to R$ such that $\varphi(x_i) = t^{a_i}$. The problem of exploring structure (or generation) of I is classical in commutative algebra. When $n = 3$, J. Herzog [**?**] completely solved this problem. However, even in the case $n = 4$, there are only some partial answers. On the other hand, a pseudo-Frobenius number α of H is an integer satisfying $\alpha + h \in H$ for all $0 < h \in H$. As is well-known that pseudo-Frobenius numbers correspond to the degrees of generators of the graded canonical module K_R of R. In this talk, let me give a conjecture on the relation between the generation of I and pseudo-Frobenius numbers of H. We will show affirmative answers when R has maximal embedding dimension or H is generated by generalized arithmetic sequence together with some general results related to this conjecture. (Received January 23, 2019)