1125-11-1960   **Sneha Chaubey*** (`chaubey2@illinois.edu`). *Spacing Problems and the Pair Correlation Statistics.*

We investigate spacing problems such as the pair correlation statistics of fractional parts of sequences αx_n, $n \in \mathbb{N}$, where x_n is rational or integer valued and α is a real number. We offer examples of sequences x_n whose pair correlation behaves as that of random sequences for almost all real numbers α. We also investigate the pair correlation function for the fractional parts of sequences $\vec{t} \cdot \vec{x}$, where $\vec{x}$ is a rational valued vector sequence and $\vec{t} \in \mathbb{R}^r$ and provide new class of sequences $\vec{x}$ whose pair correlation function behaves as that of random sequences for almost all real vectors $\vec{t}$. Part of this is joint work with Melinda Lanius and Alexandru Zaharescu. (Received September 19, 2016)