1161-11-266   **Agbolade Olakunle Akande*** (`agbolade.akande@uga.edu`). *Generalization of Euler's recurrence of the partition function and other recursive formulas for partition-based functions.*

Euler introduced the recursive formula for the partition function, $p(n)$:

$$p(n) = p(n-1) + p(n-2) - p(n-5) - p(n-7) + \cdots$$

In this talk, we will prove a generalization of this recurrence: we will give a family of functions $h_{r,l}(n)$ defined on a subset N of $\mathbb{N}$, where $h_{r,l}(n) = p(n)$ in N, and then investigate what occurs as $l \to \infty$. Also using generating functions, similar to Euler's recurrence, other recurrence can be produced for other partition-based functions, for example, a recursive formula for the number of partition with distinct parts. (Received August 18, 2020)