

1146-11-107

James A Sellers* (jxs23@psu.edu). *Congruences for Fishburn Numbers.*

The Fishburn numbers, originally considered by Peter C. Fishburn, have been shown to enumerate a variety of combinatorial objects. These include unlabelled interval orders on n elements, $(2 + 2)$ -avoiding posets with n elements, upper triangular matrices with nonnegative integer entries and without zero rows or columns such that the sum of all entries equals n , non-neighbor-nesting matches on $[2n]$, a certain set of permutations of $[n]$ which serves as a natural superset of the set of 231-avoiding permutations of $[n]$, and ascent sequences of length n . Motivated by a talk by Rob Rhoades a few years ago, George Andrews and I were led to study the Fishburn numbers from an arithmetic point of view - something which had not been done prior. In the process, we proved that the Fishburn numbers satisfy infinitely many Ramanujan-like congruences modulo certain primes p (the set of which we will easily describe in the talk). In this talk, we will describe this result in more detail as well as discuss how our work has served as the motivation for a great deal of related work by Garvan, Straub, and many others. This is joint work with George Andrews. (Received January 11, 2019)